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EDITED BY

JOHN WILLIAM MOORE, B.A., M.D., M.Ch., Univ. Dubl.;

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND;
SENIOR PHYSICIAN TO THE MEATH HOSPITAL AND COUNTY DUBLIN INFIRMARY;
CONSULTING PHYSICIAN TO CORK-STREET FEVER HOSPITAL;
EX-SCHOLAR OF TRINITY COLLEGE, DUBLIN.

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MEDICAL SCIENCE.

JANUARY 1, 1896.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Colotomy, and Conditions requiring such Operation.*[a]

By W. I. WHEELER, M.D., and Master of Surgery, Univ. Dubl.; F.R.C.S.I.; Past President, R.C.S.I.; Surgeon to the City of Dublin Hospital, &c.

IN a communication such as this it may not be uninteresting to briefly allude to the history of the operation of colotomy prior to recording personal experiences and results therefrom.

It cannot be doubted that operative measures for the treatment of intestinal obstruction were practised by the Greeks, for Bonet, who revised Barbette's work, writes that operations for volvulus were successfully performed; and in the Transactions of the Royal Academy of Paris, Vol. IV., M. Hevin alludes to Bonet's observations; and in the History of Medicine, by Le Clere, Praxagoras is accredited with recommending laparotomy for the cure of "volvulus of intussusception," he not making a distinction, and in his time also the intestine was opened for the escape of fæces, presumably a form of colotomy.

Littré, in 1710 (Mem. Acad. de Paris, Vol. X.), was the first to suggest colotomy by opening the sigmoid flexure in the left inguinal region through the abdomen; it was proposed for cases of atresia ani. Whether this operation

[a] Read before the Surgical Section of the Royal Academy of Medicine in Ireland, November 8, 1895.

was ever performed by Littré is not known, but in 1776 Pillore, of Rouen, opened the cæcum in the right inguinal region; and about the year 1800 Callisen advised the opening of the colon by an extra-peritoneal operation in the left lumbar region. He failed to open the gut upon the dead, and he is not recorded to have practised this operation upon the living. About this period Finé, of Geneva, appears to have performed transverse colotomy, and Amussat, after him, performed six retro-peritoneal operations upon the right side with five successes; while Ashmead, of Philadelphia, in 1842, performed on the left side lumbar colotomy (retro-peritoneal), evidently not being then aware of Callisen's proposed operation.—*Trans. Coll. Phys.*, Philadelphia, 1842.

In England, Curling, Bryant, and Allingham were among the earliest advocates of colotomy; in Dublin, Dr. Kidd and Mr. Butcher.

The choice of operation lies between left inguinal and left lumbar, transverse right inguinal and right lumbar.

The operation selected can be contemplated with a view to various results—viz., as in non-malignant ulceration of the bowel, in distension associated with atony, in recto-vesical fistulæ, and in volvulus of the sigmoid flexure, as finally restoring the patient to health, and thus being curative, or palliative, when relieving suffering and prolonging life, by preventing irritating fæcal discharges from passing over malignant ulcerated surfaces; and lastly, the operation may be necessary to avert impending death caused by obstruction of the large intestine, commonly cancer of the rectum, unless, indeed, there may be obvious reasons why such operative interference would be contra-indicated.

Numerous are the conditions requiring colotomy, and in the foreground I would place cancer of the rectum, and pain consequent upon cancer of the lower bowel, congenital deformity, narrowing of the gut by tubercular or syphilitic disease, bleeding diarrhœa, stricture, and cancerous prostate.

Among the conditions requiring colotomy, as before stated, I now place cancer of the rectum amongst the foremost, especially those cases in which a radical cure,

by excision of the rectum, is subsequently contemplated; unless, indeed, in those very limited malignant examples sometimes seen close to and around the anal margin, or in extensive cases comparatively free from pain and irritation. For my observation of my own cases and others is, that better results are more likely to follow excision of the rectum when the diseased lower bowel had, prior to and after operation, complete and absolute rest. For what can be more trying than an operation performed on a patient with rectal disease, sleepless from pain, with an exhausted nervous system, and harassed with diarrhœa—all consequent upon this malady; when possible, the superadded inflammatory action of irritation is palliated and reduced in other parts affected with malignant disease, previous to operation, the same rule should apply to the rectum. Furthermore, after colotomy the disease in the rectum occasionally becomes quiescent and atrophy follows from disuse; there are at least two pathological specimens verifying this atrophic condition of the rectum years after colotomy; this rare atrophy appeared to have been produced in a lady I subsequently examined who had been colotomised for rectal epithelioma by Dr. Kidd, whom I assisted at the operation.

There are some who contend that the operation of colotomy should be never performed, as the patient is an object of disgust to himself and unacceptable to others. This is not so, as at present I have under observation persons who have been colotomised, who enjoy entertainments, and are not found to be objectionable.

I certainly agree with those who hold that when the nature of the operation has been fully explained the patient should decide, but I also hold that when it is known by the attendant the relief and prolongation of life that may be afforded, it is his duty to urge an operation, even though the patient's condition might be repulsive to others. Occasionally no persuasion or argument will induce a patient to submit, even when he is aware of the happiest results colotomy can afford. This occurred to myself in a case of obstruction I was called to see in the Co. Kerry some few years ago; the patient declining to be operated upon, preferring to endure his suffering and meet the inevitable.

The selection of operation is a matter for consideration. In cases of obstruction with considerable distension, I should prefer lumbar colotomy; the so-called danger of opening the peritoneum is lessened when there is distension; intestine other than the colon is not likely to protrude with this selection. When there is not much distension, although obstruction of a short period, the bowel need not be opened immediately—the surgeon may select for himself; I would then select the inguinal operation.

Again, I would perform left inguinal colotomy to relieve lower bowel pain or hæmorrhage. My experience teaches me to believe that inguinal colotomy is almost always preferable, a better spur is procured, there is more certainty of an artificial anus being formed and less chance of fæcal fistula, besides the convenience of situation; the transverse right inguinal and right lumbar are not always easy to select from, taking it for granted that it is desirable to colotomise as near to the rectum as possible, and that colotomy is practised above and close to the lesion, which is more readily discoverable when a tumour or localised pain, or distension is present; but when not discoverable, exploration above the umbilicus will be necessary to localise, and when uncertainty is cleared up, then an operation near to and above the impediment can be performed; but if by exploring definite information cannot be obtained, I would propose right inguinal colotomy; the length of the mesentery affords an effective spur in transverse; this is not procurable in right inguinal colotomy.

Here it is convenient to review some of the advantages claimed for inguinal colotomy, as also for lumbar. The advocates of the former claim that the operation is easier, that the diagnosis in doubtful cases can be tested before the bowel is opened, that the small cannot be mistaken for the large intestine, that abnormalities of the colon do not cause abandonment of the operation, that the bowel can be without difficulty drawn to the wound and fixed with facility, that there is not such frequency of prolapse of the gut as in lumbar, that the anterior operation is more convenient to the patient and for the adjustment of pads. On the other hand, the advocates for the lumbar operation

endeavour to refute many of the above-claimed advantages, admirably discussed in the *British Medical Journal* by Mr. Bryant.

I have stated that in much distension the peritoneum is not so likely to be opened in lumbar colotomy—I say less likely, for those who have taken the trouble, as I have done, to examine the peritoneal reflexion of the colon, will find that in a very large percentage not any part of the intestine is uncovered by peritoneum. This has been alluded to by Allingham and others, and when there is long mesentery there is, in fact, not any part of the gut free of peritoneum, and then the probability is, from the position of the patient during the operation, the descending colon may have fallen towards the right side, causing difficulty in discovering the gut.

Those who assert that the longitudinal bands and appendices epiploicæ, can be observed without opening the peritoneum must have cut through the peritoneum unknowingly.

Taking into consideration that in a large percentage of lumbar colotomies the peritoneum must be opened, the descending colon may get displaced towards the other side, the cellular and peritoneal inflammation I have known to follow this operation, that it is almost impossible to make as perfect a spur, together with the abnormal and varied positions of the colon—my experience teaches me that anterior colotomy is a preferable and a safer operation, although by no means excluding entirely the lumbar operation, which has its own place in surgery. In lumbar colotomy I practically follow the laws of Allingham. An incision half an inch posterior and immediately between the anterior superior and posterior superior spines of the ilium, and midway between the last rib and the crest of the ilium, my examination led me to conclude that at least one inch posterior and midway between the spines reaches the colon more directly. I prefer the oblique incision of Mr. Bryant to the transverse of Amussat, although I have practised both, as also the vertical incision of Callisen.

In inguinal colotomy I make a short perpendicular incision in the groin, about three inches long, external to

the epigastric artery; a scalpel scissors, a few hæmostatic forceps, a dissecting forceps, needles, and sutures are required, and a director—this last, sometimes required, should be at hand. As soon as the peritoneum is opened the omentum generally appears, the peritoneal wound may now be enlarged, and the divided peritoneum having been seized with forceps, is held in position until sutured to the skin by carbolised silk; this lessens the risk of the oozing from the cut surfaces entering the peritoneal cavity. A sponge which had been previously placed in the cavity to prevent intestinal protrusion is now withdrawn, when the sigmoid flexure generally appears at the wound, recognised without difficulty by the appendices epiploicæ and bands; but should the small intestine or omentum appear at the wound, as occasionally occurs, then by passing the forefinger into the abdomen on to the iliacus muscle, the large intestine, as a rule, can be felt, or if not, further search may be made towards the sacrum, and the rectum found and traced up, or the forefinger may be passed upwards and the descending colon followed; the thickness of the large intestine will also be a guide. It is only with an unusually long mesentery that there is any delay in finding the large intestine.

The gut having been brought through the wound, a sufficient portion of the intestine, with a moderately long mesentery, is obtained. Through the mesentery I pass a needle, armed with a silk ligature which is sutured to the parietal peritoneum on each side, taking care that the gut is well protruded through the wound. In cases of a moderately long mesentery (indeed in all cases where there is sufficient mesentery to admit of a good spur), I also suture the mesentery to the parietal peritoneum, about two inches from the protruded portion of gut at the lower or distal end. This is a most important step in the operation, for it prevents subsequent procidentia. Two or three points of suture passed through the serous and muscular coats of the intestine and the edge of the parietal peritoneum where it joins the skin, complete the operation. The gut is covered with iodoform gauze and sal alembroth wool, confined by a bandage; in from ten to twelve hours

the gut is completely adherent, and can be punctured if much distension is present, or for the passage of fæces, if there are not indications for early opening, and should the patient be comfortable it need not be opened for two or three days, or even longer, which can be done with a scissors from above downwards. In addition to the above, and when there is a very limited mesentery, I introduce through an aperture made in the mesentery and below the sutures already mentioned, a sterilised elastic bougie, which, crossing the wound, lies upon the abdominal wall—this materially assists in the formation of a more perfect spur, but is quite unnecessary when the mesentery is long, as the distal sutures would be in a very short mesentery.

Right inguinal colotomy is performed on the same lines as the left inguinal. The cæcum or the part of the ascending colon nearest to it should be opened. Transverse colotomy is not an operation of frequency; I have only performed the operation upon one occasion, which shall be described.

Many years ago I performed left inguinal colotomy. The subject was an infant suffering from atresia ani vesicalis; the family were patients of the late Dr. Wyse. The case was seen first by Mr. Butcher, who advised the operation. Amongst those present at the operation were Dr. W. Corry, Mr. Blyth, and Dr. Charlton. Liquid feculent matter, as well as flatus, passed through the urethra, the abdomen was much distended and tympanitic, and in the left inguinal region there could not only be felt, but perceived, a considerable swelling. There was not any difficulty in making a diagnosis; chloroform having been administered, I made an incision parallel to and above, Poupart's ligament. The peritoneum having been opened, the semi-liquid contents of the intestine were pressed upwards to empty the gut, which was held by an assistant and kept as empty as possible. Two sutures, one above, the other below, transfixed the intestine, being also passed through the skin; the intestine was then opened, the sutures pulled up and divided and subsequently tied, and two additional sutures were introduced, one upon each side between those already alluded to. The wound was carefully cleansed, and lint, soaked in oil, placed over the

opening in the bowel, together with a pad over the entire; a roller bandage was lightly applied. The boy is now alive and well, about twenty-one years of age; the distal opening of the bowel has become obliterated; through the upper or artificial opening the natural discharge is evacuated; there is considerable sphincter-like action and contractile power round the orifice.

Case I.—Mrs. M., aged forty-three, related that for nearly two years she had suffered from constipation, latterly of the most obstinate form. She had been treated by purgatives, which, up to the period of her admission into Mespil Private Hospital, had relieved her. She suffered severely from pain over her abdomen, and had occasionally afterwards almost continuous sickness, which was never fæcal; her tongue was furred, her pulse frequent and with little volume; she complained of pain, more on the right side of the abdomen which was considerably distended. The result of a rectal examination was negative; no growth was ascertained, nothing was elicited by percussion, and the only evidence of where the site of the obstruction lay was that a wave, probably of fluid, could be felt traversing the ascending colon and stopping about the splenic flexure and again receding. No flatus came by the bowel or through an enema tube passed up the rectum, one end of the tube being in a basin of water.

The only treatment adopted was abdominal fomentations and opiates. Dr. Kidd was to have seen this patient with me, but had to leave town. I had the advantage of Dr. Gordon's opinion, who was present at the operation. Upon the day following her admission, the 3rd of November, chloroform was administered by Dr. Harley, and above the umbilicus I made an incision about two inches long, which I subsequently extended to about five inches. It is impossible to explore and search the abdominal cavity satisfactorily when no growth is felt through a limited incision—it is only wasting time. I passed my hand along the descending colon, which was flaccid and undistended, but quite free and movable, then along the transverse and ascending colon, which was greatly distended; a constriction and hardness could be felt a little below the splenic flexure, which decided the transverse operation. There was no occasion to excise the sheath of the rectus muscle formed by the internal oblique. The gut was pulled through the exploratory wound at the upper part, to which the parietal peritoneum had first been sutured to the marginal skin. I passed a suture

through the mesentery as described in left inguinal, and two points of suture traversed the muscular coat of the intestine and parietal peritoneum, which completed the operation, except the sufficient closing of the exploratory incision. Boric powder was applied and iodoform gauze, the closed surface of the incision having been previously washed with alcohol, a soft wool pad and a light roller bandage finished the dressing. Hypodermic injections of morphia were administered, the patient had ice to suck and small quantities of iced milk and water. Twenty hours after the operation I deemed it expedient to puncture the intestine with a fine, grooved needle; there was a free escape of flatus; a small piece of wool soaked in collodion was promptly applied to the needle puncture, for I feared lest the large wound might in any way get contaminated, although its surface had been carefully guarded and painted with iodoform and collodion. The following day her temperature was normal, her pulse was fuller and less frequent. I made a small opening into the gut with a scissors; forty-four hours after the operation volumes of flatus escaped, and about 2 oz. of fluid feculent matter. The progress of the case was without interruption; the lady is alive and well—fat, ruddy and healthy, nearly three years since the operation has been performed.

Case II.—A tall, handsome, well-built, active gentleman, about forty-two years of age, consulted a physician for about one year, and came frequently to Dublin for the purpose. He stated he was told that he was suffering from catarrh of the intestines. Suddenly he got hæmorrhage from his rectum and was sent by the physician to a surgeon, who, amongst other things, passed a silver catheter into his bladder. Almost immediately upon the withdrawal of the catheter he passed wind through the urethra, and some sanious, bloody fæcal fluid followed; he drew attention to this, but his condition was not regarded as serious, and he returned to the country. Shortly after he consulted me in September, 1894. There was not any difficulty in discovering a large malignant tumour, which occupied the hypogastric region and extended towards the left iliac region; the growth was somewhat larger than an orange, and could be easily felt in the rectum; he was in a deplorable condition and had much bladder irritation; he had lost weight, and was troubled with frequent diarrhœa and calls to micturate. I colotomised him in the left inguinal region. Dr. Harley administered the chloroform, and I had the advantage of Dr. Kidd's assistance. He had a very short mesentery, so much so there was difficulty in obtaining sufficient gut; in his case I used the bougie before alluded to, which

considerably assisted in the formation of a good spur. The bowel was opened three days after the primary operation, the fæcal discharge and flatus ceased to pass through the urethra, he gained weight and strength and was very comfortable. Eight months after the operation he was well; subsequently he had an attack of hæmorrhage and died about two months ago.

Case III.—A gentleman farmer, aged sixty-six years, consulted me in February, 1893 (to use his own phraseology), for a lump in his lower bowel, which caused him much inconvenience when his bowels were moving, and a considerable amount of straining and inability to "empty his bowels;" he had not any difficulty in passing water and looked fairly healthy, although he stated that he felt himself failing. Upon digital examination a large tumour could be felt nearly blocking up the rectal canal and extending beyond the length of my finger. It was easy to determine that the growth was prostatic and malignant. Being aware of cases of the kind reported by Molière and others, I advised colotomy, having first explained to the patient that the straining and labour when the bowels were being acted upon would probably cause the tumour to increase more rapidly and break down, and likewise save him from pain and distress. He consented to my recommendation; I performed left inguinal colotomy; Dr. Hadden, Dr. Harley, and Mr. Starkey were present; the mesentery was a very long one and a most efficient spur and artificial anus was formed. The gut was opened forty-eight hours after the primary operation; the patient progressed rapidly, expressed himself much gratified by the relief obtained from the operation. I saw him two months later; his general condition had much improved, and his appearance was that of a healthy man. He left Ireland to visit some friend sin France six months after the operation; at the time, I am informed, he was in good health and had not any discomfort from the growth. I heard he died seven months after, during his residence in France, thirteen months after the operation, having had two or three attacks of hæmorrhage.

Case IV.—The following case, although not colotomised, bears upon this communication, the details of which I shall briefly relate. I was called to the Co. Wexford to see a lady, aged forty, who had suffered for a week from intestinal obstruction. She was very much distended and had occasional vomiting, and had suffered acute pain just below the umbilicus. It was quite impossible to determine where the seat of the obstruction was; palpation and percussion did

not afford any clue, save that below the umbilicus where she had suffered acute pain there was a circumscribed area of dulness. The patient having been chloroformed by Dr. Boyd, I made an incision over the area of dulness, about two inches long and finally extended it. I was ably assisted by the local medical gentlemen. When the peritoneum was opened a shrivelled distended piece of small intestine, about two inches long, came into view; when caught between my fingers it separated off, leaving the end of the small intestine, between which it lay, sealed up and closed. I sutured the parietal peritoneum to the wound and the two sealed portions of intestine which I opened, by incising the closed parts; flatus passed out from both ends of the intestine; the patient lived for forty to fifty hours. I was informed that she died of heart failure.

For congenital malformation in infants, impossible to be treated through the peritoneum, I have performed four inguinal colotomies, one lumbar, the result being in accordance with the statistics of this operation on children. One recovery; four unfavourable; one transverse colotomy; recovery, case recorded; five left lumbar, four operated on for extensive cancer of the rectum with glandular complications; one case lived for two years and two months, two died within a year and a half, one died in seven months, one lived nearly four years and one month after a subsequent excision of the rectum, and died from a return of the disease three and a half years after the rectum was operated on. In all these cases the opening of the gut was delayed except one. Of nine inguinal colotomies, one was right inguinal performed upon a gentleman between sixty and seventy years of age, upon whom five years previously I had excised a large portion of his tongue for cancer, which remained healthy. When I was called to see him he had suffered from intestinal obstruction for nearly ten days. There was much meteorism, the gut was opened immediately; he died fifty hours after the operation of collapse. Dr. Gordon, Dr. Swan, Mr. O'Grady, and Dr. Harley kindly assisted me. Another was for syphilitic ulceration of the rectum, known to be alive six years after; two for ulceration, one with hæmorrhage and pain in addition. These cases are alive now three years and three and

a half years respectively. Opening of the bowel was delayed; one for malignant tumour situated in umbilical and left iliac regions, before recorded; one for prostatic malignant disease, recorded; three cases for very extensive cancer of the rectum, one causing complete obstruction; one lived four months, much relieved, bowel opened immediately; one lived fifteen months with comparative comfort, the third case lived nine months. In the two latter, the opening of the bowel was delayed.

I shall not trouble the Society with colotomy statistics. The most complete statistics will be found in the *American Journal of Medical Science*, October, 1889. Suffice it to say the mortality after all operations for malignant disease was only a little over 30 per cent.

Amussat's method shows a mortality of 25 per cent., Littré's 45 per cent. Of 52 operations for imperforate anus more than half died; of 40 operations for obstruction one-half died, Amussat's operation giving the most favourable results. Statistics cannot possibly fairly estimate the mortality; a history of each particular case would be required, for many patients have been colotomised long after the time for such operations had passed. Not taking into consideration the cases operated upon for deformity, nearly always fatal amongst the number I have selected to record, there has only been one death attributable to colotomy (fifty hours after), and performed for acute obstruction.

In conclusion, I may state that all the patients I have colotomised, who were capable of giving an opinion, expressed themselves as much relieved and comforted by the results following this operation; and it is my firm conviction that, in the majority of the cases not relieved, the fault lies at the door of the operator, for should the result following colotomy be a fæcal fistula and not an artificial anus, what benefit can follow? the fæcal discharge still passes over the diseased surface, the irritation and pain continuing as before the operation, in addition to the discomfort of the artificial opening; this is caused by an insufficient spur. True, there are some cases where there is such a short mesentery, or no mesentery at all, that it is

impossible to have a sufficient spur; but such cases are not frequently met with. I cannot too strongly condemn the procedure of dividing the intestine and suturing the lower end and dropping it into the abdominal cavity, for fæcal matter may remain in the lower divided portion, and cause ulceration and peritonitis: and should there be twisting of the gut (and not observed), the superior portion may be sutured instead of the lower. I also deprecate pins passed through the gut to fix it; flatus and fæces may follow the course of the punctures; procidentia may occur—one of the greatest discomforts after colotomy; but the precautions which I have recommended of suturing the mesentery at the distal end of the gut will prevent it, and is far preferable to pulling out the gut above and below until the mesentery is "taut," and subsequently removing the gut external to the abdomen, which procedure may be followed by hæmorrhage, and in some cases the removal of the superabundant gut is inadmissible. I have never found it necessary to use an insufflator. I prefer chloroform as an anæsthetic. Some years ago, at the old Surgical Society, I recorded my experience in the reduction of hip dislocations, that with chloroform there was more muscular relaxation, an important factor when searching the abdominal cavity for obscure obstruction. It is advisable to have the bowels acting soon after the gut has been opened, and when the bowels begin to act the wound may be dressed with carbolised oil or thiocamf, as recommended by Dr. Duffey. Time does not permit me to enter further upon the after-treatment of colotomy, or upon the application of pads or trusses, or upon the curative treatment of artificial anus.

There is indeed much, very much more, to say upon the all-important subject of colotomy, to which I would draw attention were it not that I feel I have already occupied more than the allotted time.

ART. II.—*Brief Sketches copied from my Breviary of the priceless Sayings of other Men; with some Remarks, showing what valuable Outposts they were in helping me to extend the boundaries of my Knowledge, and to avert Death while practising the Obstetric Art.*[a] By WALTER BERNARD, F.R.C.P.I., Londonderry.

As the chronology of time gradually set my midwifery practice aside, other medical subjects have of late years more fully occupied my thoughts. But as I have finished my work in this particular branch, duty calls me to give an account of my stewardship, as I am no longer steward. Each man busily engaged in active practice ought from time to time to have himself weighed in the balance, so that, if he be light-weighted, the actual weighing will act as a stimulant to draw him up to a certain standard. We were all examined, but we should all present ourselves again and again for re-examination. My examination, as well as that of others, was a very superficial *vivâ voce* one, and if it had not been superficial, as a matter of course, I should have been rejected, as my knowledge was the merest smattering.

But what saved me as years rolled on? Simply the truth of the old proverb being clearly proved to my mind, that "writing maketh an exact man." What preserved me from many a danger were written records.

The copyist and colourist, Sir Joshua Reynolds, said that "reading the thoughts of other men made observers." More than this, the Harveian Oration year after year animates us to imitate our benefactors.

I show my breviary to-night, as a few glances at it, however imperfect it may be, will illustrate more fully the plan adopted. My plea for working under this method is that it made my observations more accurate; and that such collective wisdom taught me more forethought, more patience, more promptitude, and more readiness of resource. These records are held together with as much precision as is practicable, and without the loss of time and weariness of research information is at once reached, for, as we have

[a] Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland, on Friday, November 22nd, 1895.

all experienced, the busy man has not time or inclination, when tired, worried, or anxious, to search in books of reference. An indexed system somewhat after this fashion, jotting down from month to month a few sentences, will ultimately reach to such a pitch of excellence that it will give the utmost satisfaction to the man who adopts it. Memory is dangerous, and ought not to be trusted. Want of time cannot be an excuse for not recording, and, as Gowers says so truly, "Shorthand, which is now substituted for longhand, can secure some precious words of wisdom." The more the precious thoughts of other men are kept constantly before us, the more they are emphasised, the better we become, and knowledge comes upon us as by stealth—

> "As the morning steals upon the night,
> Understandings begin to swell."

They are great outposts, and help to expel self-life in living a daily midwifery life.

To a man launched into the world to do battle against death, midwifery is the highest branch for imparting teaching. It arouses the perceptions and energies into activity by mechanical principles. It teaches him sympathy, honesty, self-denial, patience, and forbearance; and many indeed there are in its ranks whom it has taught to rise above the level of all that is acrid, trivial, and temporary in self-seeking, commercial thoughts, and reputation.

No man should have it recorded in a friend's note-book that he ever refused to go into the lowest slums to attend at night or day in difficulty and danger. In this science a man must be so physically and mentally constituted, that he must be ready in an instant for any kind of work. If this be so, then before we enter its ranks the responsibility must and ought to be realised—our personal fitness, personal inclinations, personal circumstances. Do we go to it for a living, for reputation, or for commerce? Shall we give our bodies, souls, and spirits to its entire devotion?

The training of the Dublin School during Montgomery's time had a refining influence—due, in a great degree, to his being an accomplished scholar. The education he sent forth by his classic work on the symptoms and signs of

pregnancy lessened many sad events. His book was eagerly studied, and he taught many a practitioner to lift off the clouds of gloomy anticipations from the depressed minds of pregnant women—not only insisting more on the use of purgatives, but also on the importance of reassuring words. From what I have since learned, I doubt not, these two factors saved many a woman from puerperal fever and mania. It is not out of place to mention here that Montgomery, while collecting material for his work, gratefully acknowledged the assistance he received from the late Dr. William Daniel Moore, of Dublin. Churchill's book on "Diseases of Women" followed, and, being more general, was a ready help to practitioners.

PUERPERAL FEVER.

My review of this subject, called up from the experience of other men, and taken from my records, will give a short sketch of its many phases.

Strother, of London, was the first to give it that name in 1718, in a published Essay on Fevers, and Manning, in 1771, wrote as to its cause and nature, but its lore and complications, from the time of Hippocrates, were manifest.

Smellie, who is a lesson to us all, had much of it in the homes of the people. In 1734 he studied Chapman's and Giffard's works carefully, and was a great compiler and note-taker. Whatever he advanced of his own was from real facts and observation. He was no selfish "secret-monger." His philosophic mind was exhibited by the candour with which he confessed the errors he had committed through want of skill and judgment. Though he has taught us many lessons, we have yet much to learn from him, who, so to speak, did not, like many of us, fossilise experience, failures, or disasters. Smellie, though he studied puerperal fever—John Hunter like—did not know really what it was; and I now state, that even so late as up to 1860, it was jumbled up with other puerperal troubles.

A disease, *sui generis*, was unnecessary. But we, who were actively engaged in midwifery practice, well knew, from sad records of our own, that erysipelas, typhus, scarlatina, diphtheria, the dissecting-room infection conveyed from

the operator's hand while trying to remove pieces of membrane, and the *post-mortem* table, were factors from which we obtained materials for originating puerperal fever. The absorption of these materials was too often favoured by a relaxed state of the uterus and *post-partum* hæmorrhage. During these times the whole mortality of England, as we are told, exceeded 3,000 annually, and it was not until Sir William Jenner aroused men's minds to the foci of contagion that the real practical work commenced. There was no mention of vaginal injections in the epidemics of 1827 to 1832 in Paris, nor in that of 1842 and 1844. Skinner, Physician to the North Dispensary of Liverpool, was one of the first to advocate the use of disinfectants with the lochia, and Graily Hewitt and Tyler Smith followed, laying great stress on disinfectants and antiseptic precautions. This was in the sixties. I need not give any abstracts from the many discussions on puerperal fever before the great one in 1875. It was this discussion which opened up the way to a clear understanding of its nature, and I must say that many other diseases were mixed up with the name in my mind, and, I am afraid, in the minds of others too, until this discussion cleared away the approaches to something more distinctive under that head.

So much did that great meeting impress me at the time, that I have here, on it alone, extended notes of what was sent forth. Vast material was opened up in its relation to infective diseases. Many took stock of the knowledge for elucidation, and since then it has been sifted by careful and accomplished hands. In 1882 Barnes said that the heterogenetic commences in 24 hours. This was a great point to decide for many reasons—one is that a nurse threatened to bring an action against a doctor for stating that she brought it to a case, the symptoms having commenced soon after delivery with the forceps.

The statements made by Dr. Atthill at the August meeting of the British Medical Association in 1883, coming from such authority, carried much weight. Though Dr. Atthill was announced in the programme to open the discussion, to the disappointment of many he was not present,

but his address on Metria (so-called puerperal fever) was read, and subsequently published.

Here it is unnecessary to go over his views on the pathology of metria, but only to mention one or two important points of prevention in the two forms he described—of self-infection, and the epidemic.

His antiseptic precautions of washing out the uterus, and exciting abiding contraction in a relaxed condition of the uterus with ergot for a week after the termination of labour, became widespread in the minds of practitioners both in England and Ireland, and of this knowledge I had personal experience, as I knew, and still know many, who, though bound by antiseptic law to carry out the former, continue to have faith in the ergot plan also.

At the same Section Dr. More Madden said its entity was not affected by name. He was convinced that it was a specific fever, and that it had a distinct existence. He mentioned his views of the causes which still hold good. He differed from Dr. Atthill, and was convinced of a specific infectious disease peculiar to puerperal women, the violence of which, according to Dr. B. Sanderson's experiments, and according to the clinical experience of the Dublin Lying-in Hospital, was mild at first, and of intensified virulence after some time. Dr. Madden also showed that in the Dublin Lying-in Hospital the mortality was five times greater than extern deliveries, putting down hospitals as habitats from which, under favourable conditions, puerperal fever radiated.

He then spoke of the causes, and of Dr. Williams' suggestion in 1874 of disinfecting clothes. But long before this personal cleanliness and disinfection were known, somehow practitioners were not fully alive to the life-giving and life-saving importance of carrying out protective measures, and taking guarded care to see that all discharges were disinfected and moved on.

These opinions were strongly laid hold of, and acted upon by many known to myself at that time in active practice. But what came on myself more than once by surprise were the insidious and late causes of puerperal fever, and their misleading symptoms, putting one off his

guard, some ending in the suppurative and plugging process. The occurrence of obscure rheumatic pains, feeling cold, with little rise of temperature following, and slight hysterical symptoms, were to a great extent disregarded until Priestley roused men to their great danger in his Address read at Cardiff in August, 1885.

Treatment since then, in many cases by abdominal sections, has not justified itself. When the septic process begins in the uterus and vagina, and pervades the whole system, other tissues besides the peritoneum become involved, and drainage of the peritoneal cavity will not suffice in this general affection, which will kill without pus. And the removal of the supposed septic foci has not been in such attended with success. But, when due to pre-existing disease of the tubes, the treatment is most rational.

This scourge of ages has been almost stamped out, though some are yet reported as carriers of it—not doctors, however, but midwives. As regards precautions, there is too great a tendency abroad to magnify the power of antiseptics while losing sight of the fact that in the absence of suitable culture beds bacteria cannot live. Some years ago I learned this golden point from the lips of Dr. Barlow, while going round with him in the Great Ormond-street Hospital for Diseases of Children.

ECLAMPSIA AND ALBUMINURIA.

The knowledge we have gained of this subject since Galabin published his views in the Medical Journal for October 30th, 1880, clearly bears out what he then wrote—that albuminuria of pregnancy, and its relations to puerperal eclampsia, form a small portion of the whole subject. His grouping in this Address as to the causation of albuminuria ought to be carefully studied and well remembered.

From a clinical point, I believe there is a constitutional condition called into action by pregnancy, and, looking at it from a family-history aspect, a toxic agent exists somewhat akin to that which produces tonsillitis, pelvic cellulitis, and rheumatism. As regards treatment, it must have been as refreshing to old practitioners as it was to

myself, who bled rather often, when M'Clintock sent forth that the lancet had been too much banished; and I see, under certain conditions, Drs. Barnes and Atthill still believe in bleeding. Albumen has been found in the urine of pregnant women with their first children, and mothers and children have got on well. In these we do not fully investigate the clinical side, and separate the apparently normal from the abnormal forms, which produce death towards the termination of utero-gestation in seemingly healthy women.

In future pregnancies there may be recurrences of death in utero, and yet healthy children coming to the full time, born alive, may follow. Many cases are now saved when albumen is detected by rest in bed, a milk diet, and elimination from the bowels. This mode of treatment frequently causes the albumen to disappear, and saves the necessity of bringing the gestation to an end. Despite the dictum of so distinguished an authority as Dr. Barnes, I cannot see the necessity of always carrying out what he lays down, that "whenever we find marked albuminuria, with or without convulsions in a pregnant woman, the first and most pressing indication is to bring the gestation to an end." A storm of flooding has been known to remove albumen and threatened convulsions. Why not imitate nature, and bleed before having recourse to emptying the uterus? But Dr. Barnes says, if we do not do it, nature will produce conservative abortion. His golden rules were late in coming for me, and new in my time, though when they did come we held on to them. They are so good that they could not be repeated too often. He says, when a fit is probable make no examination, pass no catheter, and force no food or medicine until the patient is under the influence of chloroform. These rules, I am sorry to say, some forget. Now, as to chloroform, I never had any fear in giving it myself in midwifery practice, nor had I a fear of even a bungler giving it; but when administered apart from labour cases by some men, while I am standing by, I am in terror, though I cannot explain the reason why. Happily, however, I never witnessed a death from it, though some patients were apparently dead.

Before I close this division of my paper, I beg to suggest to thinkers and writers that Hughlings Jackson's "Hard Sayings," and Gower's "Dynamics of Life," be carefully studied, with a view to obtaining a deeper knowledge of eclampsia and its pathology. Looking at it from a clinical point of view, Sir Andrew Clark, in a short paper, deemed albuminuria to be in some of physiological origin, and this is why mother and child occasionally escape in pregnancy when albumen shows abundantly in the urine.

Though I have tabulated in this book some of Hughlings Jackson's great thoughts and work, as well as in one of the books in the asylum some years ago, I am free to confess that, after much labour, I have not taken him in in many of his complex points, though I read him over and over again. As to Gowers, his "Dynamics of Life" are not so difficult to follow, but it takes your full energies to fix your thoughts and arrest your attention, so as fully to appreciate the usefulness of his work.

SO-CALLED FUNCTIONAL OR ORGANIC HEMIPLEGIA.

Other disturbances of the motor area before and after delivery we occasionally come across. Many of the so-called functional are curiously alike, and give evidence by pallor, weakness, staggering, or flushing, of vascular and cardiac changes, and show slight symptoms of sensory, motor, or intellectual disturbances of a passing nature. I have known a few on getting out of bed in the mornings to be suddenly seized with a sense of weight in the left limb and side, with numbness, tingling, and dragging, but with no loss of tactile sensibility.

To all my cases, functional and organic, I can now look back and trace a decided history of the toxic agents of neuralgia, gout, and rheumatism. To a few, in the cases themselves, I could trace a history of chorea in childhood. Here Lewaschew's experiments are clinically verified—"that irritation in nerves leads to early changes in the vessels which they supply." In not a few of one's old cases can be found signs of commencing atheroma, showing that the vessels are older than themselves. And some of the most unexpected disturbances may be probably due

to minute detached particles plugging small vessels in the brain.

Churchill's recorded cases of loss of power, before and after delivery, in his book on diseases of women, are of much practical interest to those who are still engaged in this study.

DYSMENORRHŒA.

Life-histories, too, show that dysmenorrhœa has a kinship to the toxic agencies which arouse mild and passing forms of loss of motor-power. It is not my intention to dwell on this subject, but merely to say that too much was said on local treatment during the discussion on Mrs. Garrett Anderson's paper, read by that lady at the Edinburgh meeting in 1875. Doctors Barnes, M'Clintock, and Atthill spoke and lauded her local views. But the greatest difficulty is to arrive at a clear idea of the ætiology of dysmenorrhœa, as an essential preliminary, before we have recourse to local measures. I remember after that discussion was over, the practitioners, when they came out into the courtyard from the meeting, had local causes and measures on the brain.

PLACENTA PRÆVIA.

Permit me to remind you that Smellie did not follow any one method. He acted according to circumstances. Ramsbotham says, Smellie was the first to adopt the practice of perforating the placenta; but Smellie does not state himself that he was the originator.

The advice to make an opening in the placenta was known even before La Motte's times, and when the unyielding os forbad an entrance to the hand two alternatives at that time were practised—either to plug and give time for dilatation, or to detach the placenta from the lower segment. This lower segment calls up Barnes' Address, published in March, 1888, and read at the Section of Obstetrics at the Annual Meeting, in this city, of the British Medical Association, in August, 1887. He illustrated, as you remember, by diagrams, his circles and three zones. Many of us are aware that he put things in a clearer light, and held in check "the rapid and forcible methods." His views became widespread,

and seemed to show, as he himself stated, that there was a large saving of life to mothers and children, and concurrently with a large saving of mothers, 33 per cent. of children were born alive. After Dr. Fleming read a paper at the Obstetrical Section in Dublin, in November, 1886, Dr. Kidd said that if hæmorrhage was extensive, and the os sufficiently dilated, the first thing was to turn. Having done that, the best thing was to wait. If the membranes could not be reached and ruptured, introduce Barnes' bags. Where there was a complete presentation of the placenta, and it was found difficult to rupture the membranes, the placenta should be perforated. As exhibited, I here give you proof from my Breviary how much I, in common with others, reverenced anything that came from Dr. Kidd on this and kindred subjects. The old dogmas were held too long, and did not keep abreast with the well-timed changes. I need not enter into details here; but plugging and rapid delivery ought to have been long put a stop to before they ceased. The plugging ought to have been in many cases done away with, and, as Dr. Kidd directed, Barnes' bags used. I see the very reprehensible method re-introduced of dilating the cervix with the fingers in the Medical Journal for October last.

USE OF FORCEPS.

Forceps, like crania of the past, are of great archeological and anthropological interest, in that from the Pompeian times they are the means—in the most extended sense, from a Lombroso point of view—of exhibiting the lines of thought of men co-equal with their cranial formations. The specimens, though rude, point to much intelligence and adaptivity of means to an end, and the varieties in the museums are full of meaning. And, in a sense, the forcipated past holds the present firmly in its grasp. This history of the past, and study of the near past and present, help us to look forward with hope for even yet greater achievements. The near present has given us much hope in the induction of premature labour at the seventh or eighth month, or division of the symphysis in pelvic contraction and deformities.

In days gone by it was instructive to study the records of Ramsbotham in the forties and fifties, when he was attached to the London Hospital in the East End, and those of Lee in the sixties which followed, when he was attached to St. George's Hospital, as from their sad experiences we learned how to think and what to avoid.

Lee's dictum was pronounced on the frequent and early use of the forceps. He not only used them himself early and frequently, but he made many a practitioner smart and wince under his lash, when his advice and assistance were needed, for not having applied them earlier. He pursued the wrong course, for he as well as others did not know the right, but when he sometimes found that he was rather too precipitate in condemning a brother, he apologised, and there lives yet one of our most distinguished members to whom he did so, unsolicited.

The rules of interference varied much. In M'Clintock's high and low forceps, the high was put on too often and too soon. Simpson's rule was:—Do not use the forceps until the os uteri is fully dilated.

The rules of interference of Collins, Ramsbotham, and George Johnston, represent three distinct schools. Collins and Ramsbotham did not use them often enough—the former, to a great extent, substituting the perforator. Bailey belonged to Ramsbotham's school and did not apply them often enough, but Johnston went to the opposite extreme and used them too frequently. There was a good deal to be said on the side of Collins and Lee. In their days it was well known that ergot acted injuriously on the mother and child in a mechanical way, hence their onslaught; but still the administration of ergot went on until M'Clintock came to the rescue. His fiat went abroad, with much good results. It was this, that unless the child was born a short time after its action, it was very likely born dead. How often the forceps were used by these different authorities, I need not here say, the numbers are well known, but, in passing, I may mention that one man used the forceps in one out of every ten or eleven cases, another only in one out of a hundred; and not fifty years ago Denham's law was again fiated—to wait until the child's head had rested six hours on

the perineum. I was frequently advised myself to wait for four hours—and oh, with what desperate anxiety I used to pull out my watch to see if the time had arrived—but truly, I did not at all times wait until the four hours were completed, for, even in those days, it was well known that when the signs set in of flagging powers interference was essential to the life of mother and child. Owing to the frequent use of the forceps the lacerated and abraded passages called for another system. Turning followed, and instrumental delivery was held back again, but for a time only, by many arguments; the chief plea being, if version be safety to the mother and child where abnormal complications darken the prognosis, imparting difficulty to the execution, will not the advantage to the patient be increased where the obstructions are only normal? In Johnston's time, and in M'Clintock's time too, the forceps was put on so often that there were many severe lacerations of the cervix, as well as the perineum. The laceration of the cervix was not frequently found out at the time, even when it set up a little cellulitis, but in the near future the examination for endometritis brought it into view. If not endometritis, prolapsus uteri.

In Churchill's time I remember removing many incrusted wooden pessaries embossed with salts.

I hope I may be found out to be wrong, but I am of opinion that the bleeding, during climacteric storms, is more severe in cases with lacerated cervices.

But in studying the use of the forceps, we can only say that we leaped to principles of the wildest kind, for in obstetrics, as well as in every other science, our senses ought to have been frequently appealed to. Had we relied more on our own personal experience, and not relied too much on that of others, we would not so often have gone astray. Turning over the writings of those whose tentative hypotheses through our ignorance we were not able to weigh in the balance, and their tentative character not being realised, we took their opinion for granted, and landed in pit falls, from the want of that exact reasoning necessary to solve complex problems in our moments of intense anxiety.

The driving power of the uterus, with the *contre coup* of the pelvis by Haughton followed on his calculations, exercised by the force of the heart's action, and Barnes' mechanics were followed by Galabin's. But it was the German sifting of Haughton's views on the heart that gave impetus to the investigation of these mechanical niceties. Thus in these days the prophylaxis of skilled mechanics and appliances have acted as preventive measures against hasty conclusions, lacerated soft parts and old pelvic troubles, so common in the past.

FORCEPS AND LACERATION OF THE PERINEUM.

The following were some of the causes, in the past, of laceration :—Driving power of ergot, and forceps not drawing the head slowly away from the perineum; not removing the blades one by one gently in the axis of the outlet; not holding back head when practicable—now occiput, now chin—and forgetting to assist the natural alternate lateral movements of the head by the well-known pendulum method, taking guarded care to carry the forceps well forward and upward when the occiput engaged the outlet, and at the same moment pushing forward the perineum.

In my day, these rules were not so well thought over and so well taught and known as they are now to every young doctor, hence the more frequent lacerations in the past from this cause alone.

Sewing the perineum was seldom done, for two reasons—first, we tried to hide our want of skill from the patient and the friends; and secondly, when we sewed it, it seldom healed from being done improperly and from the want of sanitation.

In these days a ruptured perineum, if skilfully and antiseptically treated, is almost sure to heal. In sewing, the great object is to include the deeper tissues; if this is not well done, failure will be sure to follow, no matter how sedulously the nurse carries out the antiseptic laws. Tying the thighs together I never practised. I do not agree with some, that a repaired perineum is more liable to split than one that has not been repaired. I have watched

this carefully, and have not found it to be so. Clearing out the rectum with hot water enemas, I believe, has much to recommend it and is not as frequently practised as it should be, as one of the preventive measures against laceration.

RETAINED PLACENTA.

So far back was external pressure used that it was unknown in remote antiquity when it commenced. Patience in the vanished past, as well as in Guillemeau's time in 1609, was recommended, but I could find no illustrations of it in Pompei or in the Museum of Naples. Nor indeed is it accurately known when the treatment of the "Dublin Method"[a] became fully established. Mr. Dease, in 1783, alluded to it; in 1848, Hardy and M'Clintock's observations give a minute description of it. This method, if it did not succeed, brought the edge of the placenta within reach of the finger, and thus enabled us to hook it away. They did not insist on the complete extrusion of the secundines from the maternal passages by manual pressure except in cases of hæmorrhage. Credé, of Leipzig, brought this method much under the notice of the German School in 1860, insisting on all being cleared away by pressure effects from the uterus and vagina. His description of the mode in which external pressure ought to be employed was pronounced. But how long we should wait before manual extraction has "many a time and oft" been discussed. Not very many years ago, pressing off the placenta had its advocates in Dublin and other parts, but I am happy to say the fashion lasted only a short period.

POST-PARTUM HÆMORRHAGE.

In his address at the Section in Cork, August, 1879, Dr. Madden's words since that time have been more than verified. He said, owing to the causes having been more fully looked into, this lamentable accident has gradually become less. It is of vital importance that these causes should be frequently called up from our breviaries, as our

[a] To much that is original we are indebted to Dublin. Sir Fielding Ould was the first to establish, in 1742, that the head of the child does not enter and pass through the pelvis in the same position.

memories are too treacherous, and as the lives of patients, in a great degree, depend upon how we deal with the particular cause. This is my plea for copying a few here. Most of us in country places will be forearmed and forewarned by the family and personal history, a knowledge of which will make us acquainted with some of the predispositions, such as hæmorrhagic diathesis, kidney disease, alcoholic disorders and congestions owing to liver, heart, and lung affections. When hæmorrhage does come, we must endeavour to know quickly the cause: if from partial or whole detachments; if partial, whether physiological or pathological, as we are aware both of these require different methods of procedure in dealing with the placenta. I shall only here recall, for the sake of a little practical illustration, a few of the causes of *post-partum* hæmorrhage, such as dragging at the cord, rent in the cervix, adherent piece of placenta, portion of membrane left behind, and the revival of the precipitous method of crushing off the placenta. The general predisposing causes may be put down to delayed labour, hæmorrhagic diathesis. Bright's disease, alcohol, luxury, too rapid emptying of the uterus, multipara, producing over-distension, and obstruction of the portal circulation. In *post-partum* hæmorrhage and placenta prævia especially, and indeed in all other difficult cases of midwifery, we are continually and incessantly standing on the juts and perilous ledges of life and death. If this be so, help ought to be sought early, in difficulty and danger, from the nearest practitioner. I say emphatically the nearest, for the delay in sending for our so-called trusted friend at a distance might cost the patient her life. In such a crisis let us hold in the utmost contempt our mutual distrust. What about being placed at a disadvantage; what about reputation and wretched fees? Let us risk everything, even our lives, in endeavouring to save that of our patient. You, who would get out of the way of a child on the footpath, and help her to the tenderest and most nutritious food at the table, can you then listen to a daughter's cry—"Save my mother! O, save her at any cost!" If we do not look at it in this sort of way, let us look at it from a more selfish one—from certain facts of our own sensations,

which we call consciousness; these may arouse feelings that we have left undone those things which we knew we ought to have done. If we realise this, it is possible we may awake with a groan in the small hours of the morning, on hearing which, the wife of our bosom will naturally ask, "Are you keeping anything from me?"

> "Thus conscience does make cowards of us all,
> And thus the native hue of resolution
> Is sicklied o'er with the pale cast of thought."

In 1862, soon after Barnes published his results on the injection of a solution of perchloride of iron, and some time before Snow Beck vehemently condemned the treatment, I employed it, and injected into the vagina only. In a well-known case in 1866, which baffled every other plan, I, with the assistance of the late Dr. White, of Londonderry, successfully injected it in solution into the uterus. When this was done the lady was pulseless and in an extreme state of collapse. It was afterwards used in Dublin, and recorded by Dr. Atthill as being used in Ireland for the first time by Dr. Kidd. The late Sir James Simpson used it as a styptic very much mixed with glycerine. I saw him do so with one of my patients. Dr. Madden recommended the solution to be applied by means of a sponge. His plea for giving opium was not sufficiently considered, and the importance of his full and frequent doses in the well-known causes of his trickling cases could not be over-estimated.

Before I leave the perchloride, I may mention men were in doubt and afraid to use it freely until Dr. Kidd's important statements were published, testifying that it was a safe and sure remedy. Besides, Dr. Atthill gave it as his opinion that when injected into the uterus it did not penetrate into the veins. Dr. Braxton Hicks, too, very soon recognised its value.

I will pass by Hardy's binder and external manual pressure, and come at once to transfusion. Dr. Atthill's inferences, in 1877, and Dr. Purefoy's account of a successful case in June of that year tended much to encourage others to practise the art.

Soon after this, in a case of triplets, I assisted Dr. Byrne,

of Londonderry, to inject defibrinised blood from the husband, but the woman died. The hæmorrhage in this case had not ceased, and consequently bore out M'Clintock's opinion that there should be no bleeding when tried.

In collapse from *post-partum* hæmorrhage, Dr. Macan's views, in 1876, opened up Hecker's (of Munich) plan of injecting ether in various forms of collapse hypodermically, and since that time its use has been established in extreme collapse. The treatment helped me much in cases that were attended by unskilled midwives, who knew neither how to grasp the uterus properly, nor to apply a binder efficiently. I only regret that I had not known its value years before—brandy and ergot alone being then my chief weapons, taking care to douche with cold water also. Now I only hope every man's syringe is in good working order, as one is, even in these days, liable to meet now and then with *post-partum* hæmorrhage. A new help is a revival of saline transfusions, of which I have no experience. I hope my statement will not be considered egotistical, when I say that though I had many cases at death's door, I never lost one which I had full charge of from the onset. This is, in a great degree, a mere coincidence, but at any rate it helps to show that to be forewarned is to be forearmed, for the main indication is to investigate what may be a likely cause of a coming storm.

Of the concealed accidental hæmorrhage described by Dr. Braxton Hicks I had no knowledge. Dr. Purefoy's paper, in the Obstetric Section of 1884, as to the causes of secondary hæmorrhage, was of the utmost value to practitioners; the opening Address at Cambridge, in August, 1880, on uterine hæmostatics from the unimpregnated uterus, giving the most common causes of hæmorrhage. Dr. Atthill gave a wide field for accurate diagnosis, and enumerated—

1st. Cancer.
2nd. Tumours of uterus.
3rd. Imperfect involution after labours and abortions.
4th. Granular erosion of the cervix.
5th. Granular condition of the intra-uterine surface; and
6th. Retention of a portion of the ovum after abortion.

Since I gave up this branch much light has been shed on uterine hæmorrhages, and so late as August, 1894, Dr. Smyly read his experience before the Obstetric Section of the meeting of the British Medical Association held in Bristol that year. He not only imparted information that was new, but elicited from Dr. Barnes and other distinguished men lines of demarcation to go upon. One remark of his I beg to call up—that easy dilatation meant easy laceration, the cervical tissues giving way like wet paper.

My own experience of placenta prævia is that it is a terrible disaster. In some the uterus was emptied too late; in others too early; in a few, after sharp hæmorrhage, mother and child did well; and again, when I, as well as others, least expected it, fatal results followed to one or both.

ENDOMETRITIS.

Very much in the fifties and sixties, agents were employed which were supposed to be capable of effecting good results. But the haziness of the causes of endometritis hung over us to a great degree until the discussion at the Cork Meeting of the British Medical Association, in August, 1879. Dr. Playfair commenced the discussion, and Dr. Atthill figured the causes, and spoke of employing occasionally, instead of nitric acid, iodised phenol and carbolic acid in solution. But prior to this many agents were employed which were supposed to be capable of effecting good results. Edinburgh was the head quarters of gelatinous pessaries, and from there the infection spread far and wide. In 1868 I was there with a patient under the care of Sir James Simpson, and while in Edinburgh I went to see how these things were manufactured by the thousand in a well-known establishment.

For the sake of illustration the following is an example of how much treatment was carried to excess:—One of my patients had the os touched with iodine only over thirty times; next, the cervix was slit; third, caustic sticks of zinc were forced up through the cervix; fourth, another application, I do not know of what; and fifth, I took upon myself the responsibility of having the cervix dilated, and the interior

of the uterus touched with nitric acid according to the old rules of Dr. Atthill. After much suffering and much torturing, the lady got quite well soon after the acid application. It was no wonder that Dr. Matthews Duncan, at the Manchester meeting in 1877, condemned excessive meddling. I remember in what a supercilious tone he spoke of the abuse of supports. Then Sir Russell Reynolds, the present President of the College of Physicans in London, in an Address on Specialism, on October 15th, 1881, said:—"Set fashions of disease they have treated or maltreated by endless examination, speculations, applications, and the like." And in his paper on Neuroses of the Viscera, published in the Journal of the 15th of March, 1884, Dr. Clifford Allbutt followed by stating that gynæcologists find a neurotic woman's uterus like a nose, a little to one side, flabby, and running. It is impaled upon a stem, or perched upon a prop, or is painted with carbolic acid every week, except during the long vacation, when the gynæcologist is grouse shooting, or salmon catching, or leading the fashion in the upper Engadine.

As far as my experience goes these conventionalities were not carried to excess in Dublin, and I never heard a practitioner make a statement in any degree calculated to leave behind an unfavourable impression of such similar proceedings. I may here give my own opinion, and that is, that if during this epidemic many of the ladies had been advised by their friends to go to Dublin, instead of elsewhere, there would not have been so much propping, touching, and falling out of gelatinous pessaries on door-steps. But from the useless sphere this branch of the science has advanced with rapid strides, and to gynæcologists of London, Dublin, and Edinburgh, practitioners and patients alike owe a deep debt of gratitude that never can be repaid.

Again, I say we should come up for re-examination, and show that we are not carried away by self-seeking while crossing the bar of our midwifery lives. Face to face before our former pilots, we ought to present ourselves somewhat after this fashion—"I am an open book, turn me over and over, read me through and through, and if

you find a fault in me tell me of it, and I will score it through."

We can enter into this more fully with our midwifery teachers than with hospital clinical instructors, for with the former we run more in parallel lines, inasmuch as their teaching commenced at the initial stages; the latter, as a rule, with the last degenerative changes. We from the rank and file can impart much useful knowledge to the hospital physician and learned psychologist, but none to midwifery teachers, except, perhaps, a recital of small matters, such as—do not forget to have a number of four-penny nail-brushes, and, if you have no antiseptics, turpentine can be obtained in any village for cleansing purposes.

Before I close, let me say to our juniors, that it will add much pleasure to their lives, amid careers of singularities, unreasonableness, and disappointments, if they cultivate patience, forbearance, and independence. Do not be disappointed at losing a family, a wretched fee, or a friendly nod from a fellow whom you would not pass as a first-class life for an insurance office. Only think what Corin said in *As You Like It*—"I am a true labourer, I earn what I eat, get what I wear, owe no man hate, envy no man's happiness, content with my harm, and the greatest of my pride is to see my ewes graze and my lambs suck." Indeed, we may all take a more refined and exalted lesson from the profound scholar and physician, the first great clinical teacher, Hippocrates. When his presence was commanded by King Artaxerxes, he sent a message to say that he had food, raiment, and habitation sufficient at home to enable him to pursue his calling, and to stand on his own individuality without having to wait on kings.

ART. III.—*An Interesting Solid Ovarian Tumour.*[a] By ALFRED J. SMITH, M.B.; Examiner in Midwifery, Royal University of Ireland; Professor of Midwifery, C.U.I.

I wish to bring especially under notice a short account of what was to me an extremely interesting case:—

[a] Read in the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, December 20, 1895.

Case.—C. G., aged twenty-five, unmarried, was sent up to my gynæcological wards in St. Vincent's Hospital, by Dr. Kelly of Eyrecourt, Galway. She enjoyed good health up to May, 1894. About this time she became troubled by frequent pains referred to the lower part of the abdomen, towards the left iliac fossa. She put off consulting a doctor until prostrated by a severe attack of influenza in the month of May last. At this time there was no swelling of the abdomen, at least nothing remarkable. However, Dr. Kelly made out an ovarian tumour, and sent her up to me for operation. I admitted her on the 1st October last; she looked very emaciated, with dark rings under her eyes and a typical facies uterina. She was unable to recline on the bed, so enormously distended was the abdomen; she had to be supported in the semi-erect position by an arrangement of pillows, an attempt to lie down on the bed caused intense dyspnœa. The patient stated that the enlargement of the abdomen was scarcely noticeable a couple of months before admission, that her belly suddenly became distended, and gradually grew larger and larger.

Abdominal palpation revealed an immense collection of free ascitic fluid, and no tumour could be made out. Vaginal examination threw no light on the case, owing to the great distension. The case was then transferred to the medical wards, under Dr. M'Hugh. I am indebted to Dr. M'Hugh for his report on the case while under his care. He says:—"Early in October last I saw C. G., in consultation with Dr. Alfred Smith. The patient exhibited extreme abdominal distension, with marked displacement of the heart upwards, and with dilatation of the superficial abdominal veins, including those extending upwards from the umbilicus. The diagnosis was ascites from portal obstruction. The patient having been removed to my ward, I performed paracentesis on October 8th, removing fourteen pints of thin serous fluid. A tumour occupying the left inguinal and lumbar regions, was then distinctly palpable. The paracentesis was attended with a good deal of collapse, and with a little coffee-ground vomiting. During the week or ten days following the patient's strength gradually improved, and the amount of fluid in the abdomen increased. On October 20th she was transferred to Dr. Smith's care for removal of the tumour."

On examining the case under ether, an elastic tumour could be easily palpated; it floated freely about the abdominal cavity, its range of motion being very remarkable; it touched the ribs easily on either side; it ballotted quite sharply. The tumour was easily made out as growing from the left ovary, and the diagnosis of a long, pedunculated, solid ovarian tumour was made. I postponed

its removal for a short time, hoping to be able to feed the patient up so as to increase her strength before operation. In this I was disappointed, the ascitic fluid increased so rapidly after the tapping that the distension became again enormous, and the ballottement of the tumour was so remarkably like that of a fœtal head that I was greatly impressed by the similarity.

I determined to operate without delay; the distension by the ascites was so great that the ether had to be administered to the patient sitting erect; her head was gradually lowered as the ascitic fluid escaped. The diagnosis was now established of a solid ovarian tumour—the abdominal incision was increased in size, and the tumour delivered in its entirety. (I append Dr. McWeeney's report of specimen.) The pedicle was thick, broad, and very vascular; it was ligatured with stout silk, using the interlocking chain suture. The large blood vessels was ligatured separately to give extra security, and the pedicle dropped. All went well with the patient until 36 hours after the operation. The nurse had administered 3 grs. of calomel, which caused nausea, and brought on a severe attack of vomiting; immediately the patient's condition so alarmed the nurse in charge, that I was hastily summoned about 10 o'clock, p.m. I found the temp. 96·6°, pulse, 120; patient restless; forehead bedewed with clammy sweat, and pupils much dilated. I at once recognised internal hæmorrhage. Surgeon M'Ardle joined me in consultation, and agreed with me as to the advisibility of immediate operation.

On re-opening the abdomen, fresh arterial blood welled up in great quantity; there were few blood clots. I quickly secured the pedicle and looked at it; the ligatures had not slipped, and were apparently well secured, the portion of the stump above the ligature looked quite blanched, and it was difficult to make out where the hæmorrhage was coming from. However, on investigating further, it was found that an artery was pumping away immediately under the line of suture—right in the centre of the broad ligament and below the track of the silk sutures. The artery was well secured, and a silk ligature was applied by a Tait's needle, quite close to the uterus, taking in the proximal portion of the pedicle. As the patient was so blanched and pulseless, I poured in a large quantity of normal saline solution into the abdominal cavity. This caused an immediate and marked improvement in the patient; I closed the abdominal wound and did not drain. The subsequent history was quite uneventful; the recovery was slow; there has been no return of the ascites since the operation, now seven weeks ago.

Such, in short, is the history of this eventful case. The points which seem to me of special interest may be classified under the following heads:—

(1.) The cause of the ascites.

(2.) The cause of the hæmorrhage.

(3.) The value of immediate operation.

(4.) The prognosis.

Cause of ascites.—Although it is well known that ascites is caused by solid ovarian tumours, particularly when they are malignant, still I cannot find a record of such a small solid ovarian causing such an enormous distension as was present in this case. An interesting query, What was the source of the ascitic fluid? and How to explain the rapid filling after tapping? Is it to be accounted for solely by the purely mechanical causes of pressure and irritation?

(2.) *The cause of the hæmorrhage.*—Naturally the first impression is that the artery was left untied at the operation, and that the blood went on accumulating until the patient had lost so much that she collapsed. I felt quite satisfied at the time of the operation, as did Mr. M'Ardle, who assisted me, that there was no bleeding when I closed the abdominal wound; a gauze sponge taken out of Douglas' pouch just before closing, was quite dry and not stained with fresh blood. I believe what may have occurred was that in perforating the broad ligament to introduce the suture an artery was damaged, perhaps partially torn through, and that the distress of vomiting completed the rupture.

That there was no hæmorrhage immediately following the operation is, I think, established by the following facts:—

(*a*) The length of time from operation until collapse supervened.

(*b*) The patient's condition was remarkably satisfactory up to the attack of vomiting.

(*c*) The sudden state of collapse evidenced by the acceleration of the pulse-rate and fall of temperature.

(*d*) The fresh appearance of the blood and the absence of tarry-looking blood clots.

(3.) *The value of immediate operation.*—This case demonstrates the value of immediate operation in cases of internal hæmorrhage following an abdominal section, and illustrates

that secondary operations do not materially influence the result.

(4.) *The prognosis.*—It is a fact that should be emphasised, that convalescence is very tardy after ovariotomy for sarcoma. Almost all the authorities are agreed that relapse is greatly to be dreaded. Thornton records ten cases operated on by him; three died from the operation; of the seven which recovered one remained in good health, and had a child two years later—one died a few months after operation, and another eighteen months after—both from recurrence; and four died within a year of the operation from dissemination of the growth. The most hopeful view, however, is C. Braun's, who, in the *Centralb. fur Gyn.*, 1889, No. 36, reports a well-authenticated case of ovarian sarcoma in which a cure had been maintained without relapse for eleven years.

Pathological Report on Specimen by Prof. McWeeney :—

"This is a large solid tumour, which was at first nearly globular, and is now somewhat oval and flattened by its own weight.

"*Size.*—It is nearly as large as an adult head; dimensions: circumference of long diameter, 58 cm.; of short, 53½ cm.; diameter of sectional area, 19 cm.

"*The colour* is now almost pure white; the specimen is in alcohol.

"*Consistency* solid and firm throughout, but not quite as hard as an ordinary fibro-myoma.

"*Naked-eye anatomy.*—Outer surface everywhere smooth, consisting of a fibrous capsule covered with peritoneum; at one place is a large triangular ragged spot corresponding to the pedicle, and showing the separation of the layers of the broad ligament. From this spot diverge numerous extremely large and thin-walled vessels, apparently veins, which come from various parts and converge to form a sort of venous sinus at the point where the pedicle was divided. Close by was a fold of broad ligament attached to the tumour, containing 6 cm. of the Fallopian tube, including its abdominal end. The canal was pervious to a fine probe and apparently healthy. On section the tumour has a banded appearance, but the bands are not so hard and shining as in fibro-myoma. The intervals between the bands are yellow and nottled. There are some softened and degenerated patches, but these are neither so large nor so numerous as we generally find in tumours of this size—a fact which is amply accounted for by the high vascularity of the growth.

"*Microscopic anatomy.*—The tumour consists of bundles of

spindle-shaped cells, with very much elongated nuclei approaching and perhaps identical with unstriped muscle. Still the nuclei are not typically rod-shaped, as are those of unstriped muscle. The bundles are very close-packed, and interlace in various directions. From the extreme richness in cellular elements, and their not complete identity with fully-formed adult unstriped muscle, I think the tumour should be classed as a myo-sarcoma of the ovary. Such tumours are very rare; according to Bland-Sutton, they are not so liable to secondary changes which affect similar tumours of the uterus or the broad ligament."

ART. IV.—*Funis Presentation and Funis Prolapse, with Notes of Cases.* By EDWARD J. BRADY, L.R.C.P.I., L.M., &c.; Ex-Assistant Master, Coombe Lying-in Hospital, Dublin.

IT is, perhaps, unnecessary to define what is meant by the terms Presentation and Prolapse of the Funis, yet a word by way of explanation may not be misplaced. By Funis Presentation is meant that condition in which the funis is the first portion of the fœtus, or more correctly, perhaps, of the fœto-maternal structures which is felt on examination through the *os uteri*, or through the lower uterine segment within the sometimes protruding and intact membranes.

Prolapse of the Funis, on the other hand, is that condition which can only exist after the membranes have ruptured, and is generally concomitant with their rupture and the consequent rush of the liquor amnii—the sudden escape of the "waters" bringing down one or more coils of the funis alongside the presenting part into the vagina, or may be outside the vulva, and before the presenting part—vertex or breech—has fully engaged the pelvic brim. Once the pelvis is occupied and the presenting part has moulded itself thereto, prolapse cannot take place.

It will not require much consideration to convince us that either of these conditions, particularly the latter, must of necessity constitute a grave complication in any case of labour. If there be a grain of comfort in the matter, it must be in the knowledge that the risk is one-sided or confined to the child generally, but as we have a duty equally onerous to the child and to the mother, we cannot ignore the gravity of the case.

The causes of funis presentation are variously stated, and it is needless to recapitulate them, as in ninety-nine cases out of one hundred the medical attendant can neither foresee nor prevent them. Funis presentation is *rare*, because I believe it is very seldom recognised before the membranes have ruptured and prolapse has taken place. Once recognised, however, what are we to do? I am assuming that the child is alive and viable—*i. e.*, independent of the mother if delivered.

1st. If need be give an anæsthetic, and try abdominal or external version—easy in theory, but very difficult to practice successfully—which, if the version can be performed at all, may have to be repeated two or three times before the funis is "hooked" on to one or other of the fœtal limbs.

2ndly. Attempt combined version—*i.e.*, per vaginam with one hand, and over the abdomen with the other. This mode requires great care and patience, because it is most essential that the membranes be maintained intact as long as possible. The effect you hope for is the same, of course, as in the first instance.

3rdly. If the os uteri is sufficiently large or dilatable to admit of speedy delivery, rupture the membranes as high up as possible to lessen the risk of prolapse, and you can choose between replacing the cord well within the uterine cavity by means of a repositor, or introducing the hand and performing internal version in cephalic presentations. Another alternative is the forceps. In breech cases the procedure is as usual in extracting the fœtus, the great danger being with the after-coming head.

4thly. If the case is seen early, you might try the postural method—the genupectoral position. Its disadvantages are—it is repugnant to the patient, and it is so uncomfortable that it cannot be long maintained. The only advantage that can be claimed for it is, I think, a certain amount of delay, therefore it is suitable for the nurses to employ who can recognise a funis presentation before the arrival of the medical attendant. Of course it is understood that the nurse is not further to interfere, but if there is need for temporary alteration of the position of the patient, she must manage it as quietly and as easily as possible.

This brings me to one set of cases I wish to mention. I will make the notes short, merely an outline.

Case I.—Mrs. D., multipara, in labour at term. Funis presentation recognised by a skilful nurse who placed the patient in the genupectoral position, and when that became too irksome to bear in the lateral semiprone. When I arrived the patient was in the former (genupectoral) position. Examination confirmed the nurse's diagnosis. Two coils of the funis could be detected strongly pulsating within the as yet unruptured membranes. I attempted Dr. Braxton Hick's method, only reversed, as I kept the patient in the genupectoral position, but I did not succeed in bringing the breech or lower extremity to present. I could with facility dislodge the head, but then I had a shoulder—a worse, much worse complication. Fortunately I was able easily to return the head into the pelvic inlet by abdominal manipulation from the outside, or externally. The os was then about two and a half inches in diameter, and quite dilatable. A little thought brought forth the idea of passing my hand gently into the uterus, rupturing the membranes as high up as I could without premature rupture, and hanging the cord over one or both of the lower extremities. This I did with little trouble; an hour afterwards the patient was safely delivered of a living child by natural efforts. Mother and babe did well.

Case II.—Mrs. K. L. D., seventh pregnancy, previous labours troublesome. On examination I found the child lying transversely in the uterus, and one hand and the cord presenting. Membranes unruptured. Tried Braxton Hick's form of version without success. I then passed my hand into the uterus, and reaching a foot ruptured the membranes and delivered a living child with small difficulty by Podalic version. Both mother and child did well.

Case III.—Mrs. I. S., multipara, former labours were exceptionally easy, and recovery rapid. The complication was recognised by a nurse who sent for me. On arrival I found the patient very properly in the genupectoral position, but very much frightened and upset. I could easily, on making an examination, detect a coil of the funis between the membranes and the presenting head. The membranes were very tense, the pains strong and frequent. I was, I must say, rather indisposed to interfere, preferring to await developments, and giving the patient the only solace I could offer, viz., that she was in no danger, the only risk was with the child. This gave no comfort. I was asked could nothing be done, and I said there was a chance for the child by rapid delivery if she would undertake the additional risk to herself. "My child, my child, save my child," she wailed. Mother of six or seven, her anxiety over this as yet unborn

babe struck me. I determined to try the forceps, leaving the patient in the position she occupied. I ruptured the membranes, and easily slipping on the blades delivered her without difficulty of a living child. There were no further complications.

I now turn to the other set of cases, but unfortunately I cannot show such favourable results. If the medical attendant is present when the accident occurs, his duty is to act promptly; but as things go, the mishap usually takes place in his absence, temporary, or may be before he is sent for. Nurses are only too prone to make the boast "alone I did it,' and in seeking to deserve this, endanger many lives. When he arrives it is only to find one or more loops of the cord prolapsed, feebly pulsating, or flaccid—and quite pulseless in the latter condition, the chance of saving the child being hopeless; and if the presentation be in the long diameter of the pelvis, whether it is head or breech, it is better not to interfere, but let natural efforts expel the uterine contents. If, on the contrary, owing to malposition, or other cause, we can have no hesitation in delivering—when delivery is indicated by maternal symptoms—with the least possible risk to the mother, totally ignoring the child, which is now an inert mass.

Case IV.—Mrs. M. N., second pregnancy. Vertex and prolapsed funis; forceps; one male, stillborn. When I saw the patient, about twelve inches of the funis projected from the vagina. It was pulsating feebly at about 70 per minute, and as I considered replacement impossible, I applied the forceps with the intention of saving the child by rapid extraction. In the attempt the perinæum was lacerated through the sphincter. The child did not breathe. I sutured the perinæum, inserting four sutures. I saw the patient six weeks afterwards, and found that the perinæum had united, and that she had complete control over the rectum, but she stated that occasionally some flatus escapes per vaginam. I was unable to localise the fistula, which must have been very small. Patient has had subsequent deliveries without complication.

I would like to note that this case has often given rise to the mental query, "Was I right in rupturing the perinæum to try and save the child?" The rupture was caused, of course, by the rapidity of extraction. The event proved that no harm befel the mother, and in a similar case I would be tempted to adopt the same mode of procedure.

Case V.—Mrs. M. J. G., third pregnancy. Prolapse of funis and vertex; podalic version; one male, stillborn. There was some pulsation in the funis when I examined, and owing to the vertex being high above the pelvic brim, I was unable to deliver with forceps. Version was easy, but though the fœtal heart was beating when delivery was effected, the child did not breathe (every effort at artificial respiration was tried). Mother did well.

Case VI.—Mrs. C. C., eighth pregnancy. Hand and funis. Patient was a considerable time in labour before the case was reported to me. She had an unqualified nurse in attendance. When I examined, there was no pulsation in the funis, and a hand projected through the vulva alongside the cord. The fœtal head was at the pelvic brim. Strong pains and no progress. I applied forceps and effected delivery. Mother did well.

Case VII.—Mrs. S. C., multipara. Funis prolapsed into vagina with vertex at brim. Tried replacement with a repositor. Failed. Performed podalic version, and delivered with slight trouble. Mother and child did well.

Art. V.—*The Medicine and Surgery of the Homeric Poems.* By John Knott, M.A., M.D., Ch.B., and Dip. Stat. Med. (Univ. Dubl.); M.R.C.P.I.; M.R.I.A.; Fellow of the Royal Academy of Medicine in Ireland; Fellow and Examiner (Conj. Sch. with Apothecaries' Hall) Royal College of Surgeons in Ireland, &c.

(*Continued from Vol. C., page 485.*)

From the earliest period of political history war, pestilence, and famine have been the most prominent plagues which have checked the increase, and diminished the social enjoyment, of *Homo sapiens*. In sacred and in secular records they stand out with the same prominence. The quarrelsome creature, man, appears to have a natural tendency to exercise his superfluous energies in the gruesome enjoyment of war; and the other evils of pestilence and famine are sure to follow in consecutive order. Accordingly, poetic rhapsodists and prosaic historians have, in the successive ages, found some of their most valuable material in the subject matter afforded by those terrible scourges. The sublime versification of Homer has given some of its most striking descriptions under the influence of the apparently uninspiring muse of physical suffering and disease. And curiously accurate are the few

outline sketches which his pencil has drawn of the havoc of a pestilential epidemic in a crowded camp.

The conditions for the development of febrile disease of a malignant type among the besieging Greek forces are too obvious to require any lengthy comment. The primitive hygiene, overcrowding, and animal decomposition which contaminated the still atmosphere of this aboriginal band of warriors, were probably all that could be desired for the purpose by the greatest enemy of mankind. Under the rays of a tropical, or nearly tropical sun, sickness of the most malignant type must have often visited any such assemblage of human beings. And no thinking reader of Homer can help being struck with the wonderful adaptation of the poet's mythology to the event, in making the occurrence of this plague the penalty of an irritated Apollo, whose arrows were shot from the heavens upon the devoted victims below—the rays of a burning sun descending with vindictive force upon the wretched human beings whose thirst for revenge had blinded them to the obvious instincts of self-preservation.

It is interesting to observe that in the descriptions of the plague of Athens, the story of which has been rendered comparatively familiar to the classical (lay) student in the historic prose of Thucydides and the philosophic poetry of Lucretius, a corresponding mortality among the lower animals is also recorded, and corresponding importance is attached to the *nine*-day period of the epidemic. "*Οἱ δὲ κύνες μᾶλλον αἴσθησιν παρεῖχον τοῦ ἀποβαίνοντος διὰ τὸ ξυνδιαιτᾶσθαι*"—*Thucydides.* ["But this attack upon animals was rendered more conspicuous in the case of dogs, because of their greater familiarity."].

> Nec tamen omnino temere olleis solibus ulla
> Comparebat avis, nec noctibu' sæcla ferarum
> Exibant sylveis; languebant pleraque morbo,
> Et moriebantur; cum primeis fida canum vis
> Strata vieis animam ponebat in omnibus ægre:
> Extorquebat enim vitam vis morbida membreis.
>
> —*Lucretius* (Lib. vi. 1218–1223).

The more intimate companionship of men and dogs accounted for the high mortality among the latter. Virgil also introduces the same idea in his rather dilute imitation of the vigorous lines of the great Epicurean poet:—

> Hinc canibus blandis rabies venit. . . .

And Mr. Good, in his note on the above-quoted paragraph of Lucretius, states:—"I have been informed that a similar mortality prevailed among dogs in the late terrible pestilence that attacked the town and garrison of Gibraltar."

With regard to the time which the symptoms lasted, the Greek historian tells us "διεφθείροντο οἱ πλεῖστοι ἐναταῖοι καὶ ἑβδομαῖοι ὑπὸ τοῦ ἐντὸς καύματος, ἔτι ἔχοντές τι δυνάμεως." ["Most died of the extreme internal heat which preyed upon them, in seven or nine days, even prior to their total loss of strength."] And Lucretius:—

> Octavoque fere candenti lumine solis,
> Aut etiam nonâ reddebant lampade vitam.
> [Till with the eighth descending sun, for few
> Reach'd the ninth lustre, life for ever ceased.]

Interesting it is, too, in the history of medicine, to note that both Hippocrates and Thucydides were eye-witnesses of the ravages of the Athenian plague, and that the recorded impressions of both have been preserved—one from the point of view of a professional observer, the other from that of a layman. But the views of the non-professional historian on this terrible subject must have been sufficiently enlightened by the fact that he himself had suffered from the symptoms, whereas the great Father of Medicine had not; and I think it is hardly too much to say, that the dearly-earned experience so obtained must have given the illustrious layman as vivid ideas of the symptoms associated with the disease as a prolonged professional education could have done, without the additional personal information so acquired.

There is a very considerable degree of family resemblance between the descriptions of the various Oriental or Levantine epidemic plagues which have descended to us from the pens of the various historians, lay and professional; so much so indeed as to give strong grounds of suspicion that the "standard" classical authorities have, on these subjects, been imitated or copied, as the case may be, by their less important and less accomplished followers in the after ages. Even on the subject of the epidemic wave of syphilitic disease which swept over Europe after the discovery of the New Continent, Sebastian Brandt, one of the earliest writers on this subject, published at Basle, in the year 1498, a Latin poem, in which he very obviously parodies the description given by the

author of the "*De Rerum Natura*" of the progress of the Athenian plague from its origin on the borders of Egypt. This effusion is included in a volume of "*Varia Carmina*," and bears the curious title, "De Pestilentia Scorra, sive Impetigine Anni XCVI." It includes the following among its introductory lines:—

Pestiferum in Ligures transvexit Francia morbum
Quem *mala de Franzos* romula lingua vocat.
Hic Latium atque Italos invasit; ab Alpibus extra
Serpens, Germanos Istricolasque premit.

The splendidly vigorous versification of Lucretius, embodying, as it does, the descriptions furnished him by the older Greek of Hippocrates and of Thucydides, has indeed been ruthlessly copied or imitated by the more ambitious of the writers on similar subjects in various ages and countries. Among his own countrymen, in addition to the imitation of Virgil already referred to, we have another by Ovid; and of the poets of other nations who have adopted a similar subject, and who have taken this poet as their model, we have prominent examples—in addition to Sebastian Brandt—in the works of Fracastorius, of Lope de Robles, and of Armstrong. And the very short description which the great Greek poet has left us of the pestilence that raged without the walls of Troy has apparently furnished Lucretius himself with some of his most impressive ideas. In addition to the points of similarity already mentioned, I will give another striking one which has been noticed by more than one commentator:—

Ἦκε δ' ἐπ' Ἀργείοισι κακὸν βέλος οἱ δέ νυ λαοὶ
Θνῇσκον ἐπασσύτεροι . . .

—*Iliad* I. 382.

Incubuit tandem populum Pandionis omnem:
Inde catervatim morbo, mortique, dabantur.

—*De Rerum Natura*, VI. 1141.

Very important in the history of the healing art, and certainly very unfortunate in the interests of suffering humanity, was the almost unbounded influence of classical authority through the long and dreary centuries of the decline and fall of the Roman Empire. The incubus of "Authority" hung over Europe like a nightmare, and in nearly every instance stifled every effort of original research. War, pestilence, and famine—all public misfortunes and all private mishaps—were the manifestations of the just vengeance of an

offended Deity; and every important scientific discovery or mechanical invention which was likely to enlighten the minds, or improve the physical surroundings, of suffering humanity, was unhesitatingly attributed to the teaching of the devil! To mention one conspicuous example, "that first and most indefatigable philosopher of his age," Roger Bacon, received, as a token of public gratitude for his wonderful scientific investigations, a sentence of ten years' imprisonment; his mysterious chemical knowledge having being attributed to his intimate personal acquaintance with Beelzebub. The dawn of returning enlightenment was undoubtedly due, carefully as the fact has been kept in the background by so many historians, to the incursions of the Turks at one end of the Mediterranean and the Moors at the other. And while the classical authors of Greece and Rome were the only acknowledged authorities in all things scientific, there is no matter for surprise in the continuous reproduction of their mythological and metaphysical notions in connection with the most materialistic facts of physical observation. In one of the laudatory "*Epigrammata*" prefixed to the "Tractatus de Peste" (1665), of Diemerbroeck—"quæ annis post Christum natum 1635, 1636, 1637, totum Belgium, maximamque Germaniæ superioris partem diris furiis peragravit, et imprimis Geldriæ provinciam, atque in ea omnium maximè civitatem Noviomagensem anno 1636 miserrimè afflixit"—we find the following opening lines (reproducing, with almost photographic fidelity, the mental picture of the onset of the Homeric pestilence of the Trojan sea-board):—

Quis sacrum queat explicare morbum?
Qui spargens varias Dei sagittas,
Ferit mille modis volante telo,
Grassans dissimili necatione:
Qui quos corripuit suo veneno,
Hos ipsos quoque vertit in venenum,
Nec curam patitur medentis ægro,
Ægrum quin faciat simul medentem.

In the sixth chapter of this clearly-written and interesting description of one of the malignant epidemics, Diemerbroeck enumerates the premonitory meteoric and other physical portents which preceded the terrible visitation. They are, for the most part, the same as were taken by the old Greek and Roman augurs to foretell some grave public calamity;

and include several of those which are familiar to readers of Shakespeare as presaging the murder of Julius Cæsar. "Hujus quoque generis varia signa pestem Noviomagensem prænunciare visa sunt: Tota enim æstate anni 1635, non minus quam anni 1636, hujusmodi indicia se prodiderunt: Nempe, stellarum ardentium in cælo oberrantium magnus concursus, et in terram (1) prolapsio. Plurima et fere continua nocturna fulgura, cælo non nubiloso existente, sine pluviis et tonitruis. Venti austrini (2) diuturniores, sæpe etiam nulli venti manifesti. Maximi æstatis fervores, et siccitates diuturnæ, quæ hyemem tepidam humidamque sequebantur, et rursus ab hyeme tepida excipiebantur. Avium (3) multo rarior numerus quam aliis temporibus. Maxima et incredibilis insectorum (4) copia, qualis vix unquam visa fuit, ut culicum, papilionum, scarabeorum, crabronum, cicadarum, omniumque maximè muscarum, quarum utroque anno tam stupenda ubique copia reperiebatur, ut ædium interiorum parietes undique muscis consiti viderentur, et foris ipse aër multis in locis quasi muscarum nubibus obfuscaretur. Carnium aliarumque rerum putredines, præter consuetudinem, longè citiores et graviores. Mulierum gravidarum (5) frequentes abortus. Morbi epidemii mali moris, ut erant variolæ, morbilli, dysenteriæ valde malignæ et contagiosæ, imprimis febres putridæ malignissimæ, et purpuratæ, plurimisque lethales. Pueri in lusibus suis mortuorum (6) sepulturam agentes; aliaque similia, quæ omnia huic regioni imminentia mala prænunciabant: quibus et illud accedebat, quod pestis crudelissima Lugdunum Batavorum jam miserrimè affligeret."

And worthy of note is the time which the sickness lasted in the majority of the cases—"Plurimi ægri ante septimum diem interibant, multi subito prima die extinguebantur, multi quoque tertia vel quarta, plures autem quinta vel sexta. *Qui diem septimum et nonum supervivebant, de iis aliqua spes erat.*

The symptoms described by the competent observers who have given detailed descriptions of the plague, are usually those of low malignant fever, accompanied, in a very large proportion of cases, by cutaneous eruptions or glandular enlargements, or both. But, as the Homeric text does not discuss clinical details, I will also forbear to do so, and shall accordingly dismiss this section of my subject with a quotation from Sir Thomas Watson: "Concerning the

plague—as I have never seen, and hope never to see it, and as, with Cullen, I 'think it unfit for a person who has never seen the disease to attempt its particular history,' I shall not presume to offer any observations in detail."

DISPOSAL OF THE DEAD.

—— αἰεὶ δὲ πυραὶ νεκύων καίοντο θαμειαί.

Iliad, I. 52.

With a widely-spreading and rapidly-progressive civilisation, the proportionally large area of the surface of our globe which has been brought under its influence is now less frequently depopulated by war, pestilence, and famine. But the consequent too rapid increase of the numbers of the *living* has had the effect of again bringing into public prominence the question—among so many other troublesome ones connected with the hygiene and sanitation of our overgrown cities—of the most desirable means of disposal of the bodies of the *dead*? In the modern metropolis of the world, the subject has attained so much public importance as to engage the best attention of two of the highest living surgical authorities—of Sir Henry Thompson and of Mr. Erichsen.

Of the three principal methods of disposal of the bodies of the dead—burial, burning, and embalming—we learn from the Homeric text that the second was the honoured custom of the Greek warriors. It has been asserted that "cremation may be regarded as the universal custom of the Indo-European races." This statement, however, like most other very comprehensive statements, will be found, upon inquiry, to be much too general for universal acceptance. That the Grecians were also in the habit of *burying* their dead—in times of peace, is well shown in the argument (recorded by Plutarch) which Solon used to justify the claim of the Athenians to the Isle of Salamis, against that raised by their competitors, the Megarensians. The bodies found buried there had been interred in the Athenian fashion: each body laid in a distinct sepulchre, and facing the West. The Megarensians turned the bodies to the East, and placed two or three in a single sepulchre. We also have evidence that both burning and burial were known to the Romans from the earliest times.

(*To be continued.*)

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Life of Sir Henry Halford, Bart., G.C.H., M.D., F.R.S., President of the Royal College of Physicians, Physician to George III., George IV., William IV., and to Her Majesty Queen Victoria. By WILLIAM MUNK, M.D., F.S.A., Fellow and Late Vice-President of the Royal College of Physicians of London. London: Longmans, Green & Co. And New York. 1895. 8vo. Pp. 284.

THIS is a fascinating book. The author has already won literary fame by "The Roll of the Royal College of Physicians of London," published by the College in 1878, by "The Gold-Headed Cane," published in 1884, and by his work entitled "Euthanasia; or, Medical Treatment in aid of an Easy Natural Death," published in 1887. We question, however, whether any of those works will vie in point of interest with the biography of Sir Henry Halford, the polished, courtly, resourceful, able, and sympathetic head of the medical profession in the British Islands during the early decades of the nineteenth century.

Sir Henry Halford's life is an instructive object-lesson, particularly to the more youthful members of the profession. But it is more than this. It marks the transitional period between the old and the new schools of medical thought and practice. Sir Henry strove hard during his presidency of the Royal College of Physicians of London, which lasted well-nigh a quarter of a century, to bind close the ties which linked the College to the ancient Universities of Oxford and Cambridge. But the democratic spirit of the age proved too much for him, and a number of the Junior Fellows of the College thought otherwise than their President. They contended that the higher order and offices of the College should be open to all, no matter where or how educated, provided

the candidates came up to the requisite standard of *mere medical knowledge*. By perseverance and pertinacity they at length won over a majority of the Fellows, and succeeded in 1835 in severing the time-honoured connection of the College of Physicians with the two Universities, and in altering the whole constitution of their College.

Dr. Munk points out that Sir Henry Halford, in his capacity of President, remained loyal to his College during and after this crisis, and carried out honestly, with prudence and judgment, the various important alterations which were in consequence introduced.

We cannot help sympathising with Dr. Munk when he writes: "Those who remember the physicians of the period of which I am writing—and there are a few still living who do so, myself among that number—their classical culture, their staid philosophic habit of mind, their social position, and the estimation in which their College was then held by the best and highest of the land, can but lament the change in all these respects which has since taken place, in sequel to, and as it would seem partly in consequence of the changes of 1835. While the other branches of the medical profession—the surgeons and the apothecaries—have improved their culture and position, the physicians have lost much of that which they formerly possessed, and have reached a level, there is no denying it, not equal to that which they once enjoyed in this country." (Pages 126, 127.)

Sir Henry's own character is fitly summed up in the following sentence from his first Harveian Oration, delivered before the Royal College of Physicians on October 18, 1800—he is speaking of his teacher and friend, Dr. Warren, not, of course, of himself—"Tantam denique morum comitatem et facilitatem habuit, ut nemo eo semel usus esset medico, quin socium voluerit et amicum." An accomplished patient and friend, General the Hon. Edmund Phipps, in a letter to Sir Henry Halford, dated July 14, 1832, bore testimony to the justness of the application of these words to Sir Henry himself. (Page 244.)

But apart from the medical interest attaching to this book, it will attract readers of all sorts and conditions of men from the insight it gives into the intimate family history of the

Royal Family in the earlier part of the present century, as well as into "high life" in those days. To the lot of no other member of the medical profession has it fallen to be the confidential physician and trusted friend of four monarchs in succession, of several generations of royal dukes and princesses, and of dukes and duchesses and other distinguished personages without number.

The book, however, must be read to be appreciated, and with this hearty commendation we leave it in our readers' hands, merely stating that the large, clear type in which it is printed cannot strain the most sensitive eyesight. We say this, bearing in mind "the sage counsel" Sir Henry once gave to a patient: "If you wish to preserve your eyes, never read by candle-light anything smaller than the ace of clubs."

Medical Electricity: A Practical Handbook for Students and Practitioners. By H. LEWIS JONES, M.A., M.D.; Fellow of the Royal College of Physicians; Medical Officer in charge of the Electrical Department in St. Bartholomew's Hospital. Being the Second Edition of "Medical Electricity," by W. E. STEAVENSON, M.D., and H. LEWIS JONES, M.D. With Illustrations. Cr. 8vo. Pp. 474. London: H. K. Lewis. 1895.

IN the present issue of this volume "the general plan of the last has been retained, with slight modifications." The early chapters have been simplified; and we have no doubt that, in their new and more transparent dress, the contents will be more easily mastered by the average medical reader. This is, in itself, a great boon to the average practitioner, whose knowledge of the theory of the rapidly growing science of electricity is, usually, very elementary. The author hopes that this part of the work will be "found useful, if only as a glossary, to explain the technical words and phrases which are necessary in the more strictly medical parts." The experience of every one who has had to master the almost uncountable number of scientific epithets in the electrical vocabulary will lead him to appreciate the way in which the writer has arranged his facts and his language in Chapters II., III., IV., and V.

The changes in the practical part of the volume are inconsiderable. As the author very justly complains, the therapeutics of Medical Electricity have not yet received the proportion of attention which the vast importance of the subject certainly deserves. The remark applies especially to Great Britain. And he expresses—in the opening paragraph of his preface—the hope which we cheerfully echo, "that in time the value of electricity may become more widely appreciated in this country." The author grounds this hope on the favourable reception which the first edition of the book received from the professional public. We thoroughly sympathise with the feeling, and we venture to express the small prophecy that the success of the present edition will not be inferior to that of the former. We know of no better introduction to the study of this important subject than Dr. Jones's very convenient volume; and we cordially recommend it for the desk of every medical practitioner.

The Value of Electrical Treatment. By JULIUS ALTHAUS, M.D., M.R.C.P., M.R.I.; Consulting Physician to the Hospital for Epilepsy and Paralysis, Regent's-park. London: Longmans & Co. 1895.

WE perused, with real pleasure as well as profit, this instructive little *brochure* from the pen of one of the most eminent of the pioneers of the science and practice of medical electricity. Its 96 octavo pages are loaded with concentrated information, every line of which has value for the practising physician. The author everywhere speaks with the clearness which can be obtained only by prolonged practical experience of such a subject, and with the unconscious dignity which is the fruit of well-earned authoritative opinion. Dr. Althaus reflects with some sadness on the facts that we have, on one hand, the truly outrageous quackery which has been permitted to flourish in connection with "medical electricity," and which has very necessarily, indeed, "created a prejudice against it in many minds;" and, on the other, the peculiar notion, supported by such advanced German thinkers as Möbius and Moll,

"that electricity in medicine does not act through its physical and chemical qualities as other remedial agents do, but simply through suggestion—the fad of the day." The reflection is, certainly, one to make an earnest worker in this important field feel disgusted or annoyed—according to the tone of his temper. The evil has, however, borne one good fruit—"having been in intimate touch with this subject during a long professional life, it has, under the circumstances just mentioned, appeared to me worth while to submit once more to the profession my views on the uses and limits of usefulness of electricity in medicine."

But a few pages are given to discussion of instruments and measurements. In them, however, we find an enormous amount of knowledge, conveyed in the most attractively lucid style. The thoroughly scientific spirit in which the author approaches his subject is shown in the following sentence (page 18):—"Pflüger's researches on electrotonus, which were made on frogs' nerves, but have been shown to be applicable to living men as well, appear to me to supply the key to the large majority of the therapeutical applications of the constant current." He considers electricity under two heads:—(1) In the state of rest (static, &c.); (2) In motion (current, &c.). Static (Franklinic) electricity was long known, and used in medicine before current electricity had been discovered; but lost favour when the striking phenomena of galvanism and faradism became public property. "Of recent years static electricity has, however, gradually crept back into practice, and is now considered to be a very useful addition to the electric instrumentarium." The constant (continuous) galvanic current "is, by far, the most important form of electricity for medical purposes." "Duchenne's splendid researches on the effects of localised faradism on the motor nerves and muscles will for ever remain a monument to his genius; but the expectation held out by him that the induced current would be found superior to other forms of electricity as a therapeutical agent have not been fulfilled." But we must not extend the length of our notice of this small volume by quota-

tions. One sentence is nearly as important as another; and we will conclude by advising every medical practitioner to procure a copy for himself, and straightway proceed to read, mark, learn, and inwardly digest the contents thereof. Every line bears the unmistakable impress of the hand and brain of an earnest, careful, and conscientious explorer and observer in one of the most fruitful, although still one of the least familiarly known, domains of medical practice.

A Junior Course of Practical Zoology. By the late A. Milnes Marshall, M.D., and C. Herbert Hurst, Ph.D. Fourth Edition. London: Smith, Elder & Co. 1895. Pp. 486.

Since the appearance of the third edition, the tragic death of Dr. Marshall has left Dr. Hurst the entire responsibility for the book, and for the alterations in the present edition he alone is responsible. The chief changes are in the chapter on the Amphioxus—a type where the difficulty of "drawing the line" for junior students is, indeed, great.

Beyond some few laboratory notes, the Course consists of the examination of four species of protozoa and twelve of metazoa; and there is no attempt made to connect the forms, or to show by what paths of evolution the different types have reached their present forms. An attempt to connect the types, and to give shortly the reasons for their similarities and their differences, would add greatly to the interest of this valuable handbook.

The Student's Guide to Practical Therapeutics. By Alexander Wheeler, L.R.C.P. & S., Ed. Author of "The Student's Handbook of Medicine," "Our Unseen Foes," &c. Edinburgh: Wm. Bryce. 1895. Pp. 244.

This little book is intended to be a pocket manual for the use of students and junior practitioners. It is divided into three parts. Section I. gives a concise account of the principles on which the treatment of each disease is founded. The indications for the use of this method or of that are

explained, and a number of prescriptions are given, showing how various drugs may be suitably used or combined so as to fulfil the indications given.

Section II. contains practical hints on prescribing; a list of the more important incompatibilities and tables of doses.

Section III. gives an account of the therapeutic properties of all the drugs in ordinary use.

The book is clearly written and well printed. It is one of the best of the works of this class that we have met with.

Herbal Simples approved for Modern Uses of Cure. By W. T. FERNIE, M.D., Author of "Botanical Outlines," "A Plain Guide to the Water Cure," "Influenza and Common Colds." Bristol: John Wright & Co. London: Simpkin, Marshall, & Co. 1895.

WE feel grateful to Dr. Fernie for his delightful little book. With infinite trouble he has gathered the folk-lore and traditions of the Three Kingdoms on herbal simples, and the result is a most enjoyable account of our homely curative remedies told in the most pleasing way.

That the author should hold a very favourable opinion of the therapeutic value of our herbal simples is not unnatural; and although we cannot agree with him on every therapeutic point, we nevertheless enjoy the old-world flavour of his eulogies—they take us back to Gerrard's Herbal, and recall the annotations of Culpepper, not to speak of the simple faith of the Saxon Leeches.

Dr. Fernie has done for British herbs what Porcher's "Fields and Forests" did for those of the Cotton States of America, but his work has the charm of folk-lore and traditions which, from the character of the work, were wanting in Porcher's book. The plan of the book is very suitable for reference: the plants are treated alphabetically; and commencing with the derivation of the name of the plant, the author passes to an historical summary of its use, and then enters on the consideration of its therapeutic properties.

To the volume there is an index of diseases and their

remedies, which, at a glance, brings the whole domestic medicine of the sixteenth and seventeenth centuries to memory, and reads like a page of the "Arcana Fairfaxiana."

We hope "Herbal Simples" will see many editions, for we do not know any book of its kind more capable of giving a quiet hour of pleasure to a physician, especially a country one, who, in his daily rounds, will find that the book has added fresh charms to the simple herbs which strew his path, and given him a keener interest in Nature.

Year-Book of the Scientific and Learned Societies of Great Britain and Ireland, comprising Lists of the Papers read, during 1894, *before Societies engaged in Fourteen Departments of Research, with the Names of their Authors, compiled from Official Sources.* Twelfth Annual Issue. London: Charles Griffin and Company, Limited. 1895.

For those who are engaged in literary work the Year-Book of Scientific and Literary Societies is simply invaluable, and as a time-saving book of reference it is indispensable.

The medical section of the work is particularly full, even the papers read before branch meetings of the British Medical Association are noted, and the Cork and Belfast Medical Societies each are credited with a good list of contributions.

With the aid of this useful Annual the reader is able to find the title of any paper read at any medical society in a few minutes—information unattainable elsewhere, if we except the *Index Medicus.*

The A B C Medical Diary and Visiting List, combined with the "Excerpta Therapeutica." 1896. London: Burroughs, Wellcome & Co., Snow Hill Buildings, E.C. Copyright.

The enterprising Firm which has issued this very handy and complete pocket-book deserves well of the Medical Profession for placing it in their hands.

The entire Diary has been revised, but especially that portion of it which bears the title of "Excerpta Thera-

peutica." In this, the "brief therapeutic notes" will be found most useful and instructive. They are followed by a very full index of diseases and remedies, a posological table, and a most comprehensive and valuable antidote table, which has been compiled specially for this issue of the A B C Medical Diary and Visiting List.

The "Therapeutic Notes" on medicinal animal substances, and on the anti-diphtheritic and anti-syphilitic serums, will prove of particular interest and value just now. They are, indeed, monographs *in nuce* on the subjects with which they deal.

We heartily commend the A B C Medical Diary to our readers in town and country alike.

LITERARY INTELLIGENCE.

The Rebman Publishing Company announce for immediate publication a new Edition, revised and brought thoroughly up to date, of "A Text-Book of Surgery," edited by Wm. W. Keen and J. Wm. White; a new work on the "Pathology and Surgical Treatment of Tumours," by Prof. Senn, and a new Edition of "Principles of Surgery," by the same author; "A Text-Book of Obstetrics," edited by Drs. R. C. Norris and R. L. Dickinson (Art Editor), with the collaboration of thirteen Associates. The same firm have also just issued a new Edition (the 3rd) in one volume of Dr. J. V. Shoemaker's "Materia Medica and Therapeutics."

LOTION FOR NETTLE RASH.

℞.—Sugar of lead, 1 gramme; dilute hydrocyanic acid, 15 grammes; alcohol, 30 grammes; distilled water to make 60 grammes—make a lotion. To be applied on cotton wool to the rash.—*Ther. Bl.*

LACTOPHENIN.

Dr. H. Strauss recommends lactophenin as an anti-neuralgic remedy. He gives it in doses of 1 to 2 grammes daily. In cases of acute rheumatism and in sciatica, he has found it efficacious. It possesses the advantage of being a perfectly innocuous agent. The sedative and hypnotic action of the drug was tried in a case of delirium tremens, and in three cases of myelitis. No effect was produced in the case of delirium tremens, but in two of the myelitis cases the drug produced sleep, and marked lessening of pain.—*Les Nouveaux Remèdes*, No. 5.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PRESIDENTIAL ADDRESS.

On the Management of Cases during the Period immediately following Operation.[a] By Sir Thornley Stoker, M.Ch., R.U.I., *Honoris Causâ;* President, Royal College of Surgeons, Irel.; Surgeon to the Richmond Hospital and to Swift's Hospital; Fellow of the Royal University.

When I last had the honour of addressing you from this chair, I took occasion to apologise for speaking on a vulgar instead of an obscure or novel subject, and I am again disposed to use my opportunity to a like effect. I do not presume to address myself particularly to the more senior portion of my audience, but there are a large number of the younger members of the Academy present, and to them I venture to say something about a subject which exercised me much in my younger days—which does so still—and which is important because of its very commonness, and worthy of attention because it is sometimes overlooked.

I refer to the management of patients during that oftentime critical period between the performance of a surgical operation and the moment at which, the risks consequent on it having passed, the patient becomes free from immediate and non-particular danger. This is the period occupied by two conditions of depression common to any, or all operations, and therefore to be considered by themselves, apart from special dangers proper to individual surgical procedures. They are—

a. Shock.

b. Exhaustion, consequent on vomiting.

[a] Address at the opening of the Surgical Section of the Royal Academy of Medicine in Ireland, November 8, 1895.

They may not be present, or being present, may vary in duration from a few minutes to several days. Their intensity cannot be foretold; it may be but slight, or may be grave even unto death, and nothing in the condition of the patient, the nature of disease, or the character of operation can afford any reliable evidence as to their possible severity. They may be serious in those who are vigorous, and unimportant in those who are weak; the very young and the aged may suffer from them but slightly, and persons of middle life may be in peril; they may follow the most trivial operation, and be absent from the most severe.

Those who have had experience in surgery know how often they meet surprises in the immediate consequences of operation. Sometimes the experience is the pleasant one of finding the treatment borne better than was expected; sometimes it is the sad one of danger following an operation when it was not looked for. The lesson we learn is, never to neglect during and after operations every detail which can lessen danger by diminishing the chances of shock or exhaustion, and which can assist subsequent reaction.

The causes which tend to produce shock are numerous, and, for the most part, obscure. There are many states of enfeebled health, of particular debility, and of other recognised conditions which predispose to it. But there are unseen, and often unexpected circumstances, which may lend themselves to its production. Operative measures should, therefore, never be approached without the most careful general examination of the patient, and the most thoughtful consideration of his physical position. It is impossible to formulate exact laws in this direction; these perceptions are largely matters of experience, and only time and clinical study can develop them. But from long observation we know that such considerations of the general state of a patient about to be submitted to operation are often overlooked or disregarded, and I suppose most of us have had bitter regret of our want of perception.

In addition to general matters concerning the patient, there is one particular which is proper to the surgeon, and in which great error is common, I refer to the undue prolongation of operations. Two circumstances have, in

our generation, lent themselves to this; one is the facility afforded by the use of anæsthetics; the other the extreme care, conservatism, and attention to detail, begotten by the introduction of antiseptic methods. There is no one circumstance which so tends to the production of shock and to the exhaustion produced by subsequent vomiting as prolonged anæsthesia. I have had this impressed on me by severe lessons, and I am satisfied that we should watch ourselves very closely in this direction, and sacrifice detail and conservative measures in instances where they demand the unsafe prolongation of anæsthesia. I can look back on cases where I regret the time spent on an operation; for instance, the only example of elected operation for the radical cure of hernia which has ever proved fatal in my practice, was one in which, in my anxiety to conserve the testis in an extremely complicated rupture, I prolonged the dissection to such an extent as to produce shock from which the boy never rallied. I know now that had I removed the organ I could rapidly have concluded the treatment and saved the patient.

What I have said of the production of dangerous shock is largely true of exhaustion immediately following operation. Given the conditions, known and unknown, which predispose some patients to it more than others, prolonged anæsthesia with its often attendant vomiting, is its most usual provocative. We will generally see post-operation vomiting proportionate in severity and persistence to the duration of anæsthesia.

So much for causes of shock and vomiting; what of the means of avoiding them, and of relieving them if they occur? It is a truism to say that prevention is better than cure, and it will be seen from what I have said that a due despatch in the performance of operations, and a consequent shortening of the period of anæsthesia is the most important direct measure to attend to. To an audience like this I need not elaborate this part of my subject; indeed, I could not if I would, for there are a hundred various conditions and circumstances which must guide us, and their knowledge and application are among the matters which make the difference between one surgeon and another, and which lend themselves to our successes or contribute to our failures.

Shock and vomiting are so much due to the same causes, and so subject to the same remedial measures, that it is difficult to consider them apart. I have learned to rely on three agents only for the relief of shock—

a. Heat,

b. Alcohol; and

c. Morphia or opium.

Concerning the first of these, we generally find that if the surface of the body can, by the use of hot applications, be brought to a wholesome warmth, the danger has been overcome. If to the use of hot water, contained in bottles, or, better still, in small indiarubber bags, we add rubefacient applications of mustard to the extremities, about the region of the solar plexus, or over the heart, we have a valuable armament for the inducement, not only of heat, but also for the production of a physiological stimulation.

If these measures fail, or response to them is too slow, alcohol must be resorted to. It should be given by the rectum, not only because vomiting may exist, or may be induced by the introduction of stimulants into the stomach, but also because when shock is present the stomach has little or no power of assimilation. The possible necessity for rectal stimulation and alimentation after operation is one of the reasons why the bowel should always be thoroughly cleared before any procedure, however slight, in which anæsthesia is to be employed.

Failing by these measures to induce reaction, opium or morphia has to be resorted to. If rapid effect is sought morphia is the most useful agent, and it is also that which best controls vomiting. But where there is no vomiting, and where the stimulating effect of the drug is our chief aim, opium itself is to be preferred; it must be given by the rectum. No rules can be laid down for the dosage in these cases, beyond the two points that are to be borne in mind—first, that opium is tolerated in large quantities by persons suffering from shock, very much as those bear it who have lost much blood; and second, that it must be given intelligently, that is to say, given watchfully, dose following dose, until the due effect is produced. The value of morphia given hypodermically, or of opium administered by enema in all cases of depression

due to shock, cannot be overstated. I can look back on lives lost after operation from shock and exhaustion, which greater clinical experience and more courageous use of morphia or opium would now enable me to save. If it be sought to study the effect of opium as a stimulant, it cannot be better seen than by watching its effects in the shock and collapse following extensive burns. I have to thank the help afforded by modern nursing development for much wholesome change of opinion in these matters. It has only been since the introduction of trained women to the bedside, with their watchful intelligence and careful skill, that I have learned properly to deal with cases after operation. That intuitive faculty, amounting to what used to be miscalled an "instinct," and which is the special property of women, finds its best expression in the study and management of difficulties like those I speak of.

Of the treatment of the usually more persistent condition of vomiting, with its attendant exhaustion, much need not be added to the limited list of measures employed in the treatment of shock. Warmth, rectal stimulation, and the hypodermic syringe again find their use. If to these I add rubefaction, or occasionally limited blistering over the stomach, I have enumerated all the means I find most excellent. The host of drugs recommended to check vomiting, are, in my experience, worse than useless; they are not only ineffectual, but they add seriously to the gastric disturbance. One measure, introduced of late, we are trying in the Richmond Hospital. I mean the use, for some hours after operation, of a mask charged with vinegar. We are not yet in a position to speak definitely about this treatment, but it seems to give promise of success in cases where chloroform has been the anæsthetic. The rationale of its action is simple; the chloroform which is exhaled by the lungs is decomposed during expiration into chlorine and formic acid. The chlorine, by its irritation of the trachea and larynx, is probably the cause of vomiting, and being taken up by the acetic acid, is rendered harmless. But so far as present experience carries us, the hypodermic use of morphia is the cardinal remedy for the species of vomiting of which I speak. It must be used intelligently, fully, and fearlessly, and will

exercise its effects both as a stimulant and gastric sedative far beyond those of any other remedy.

If it be conceded that it is useless to introduce stimulant or aliment into the stomach of a patient suffering from shock, it will be granted that it is not only useless but improper when vomiting is present; and here a previously-cleaned rectum serves its owner well. Stimulant associated with such nutriments as can be readily absorbed, should be periodically introduced. It is generally found that vomiting any more than shock does not persist with a warm surface, and therefore the three remedies I have indicated should be employed in the same sequence as in shock; first, heat; second, rectal stimulation and nourishment; and tired, morphia.

The distressing symptom of thirst is one which gives great trouble. There is nothing I have learned to discredit more thoroughly for the relief of thirst than ice. It increases thirst both directly, and by the induction of vomiting. The emesis it produces is due to the quantity of water the sucking of ice insidiously introduces into the stomach. Nothing should be put into the stomach in these cases; so that ice is not only useless, but hurtful. Thirst is best relieved by frequent rinsing of the mouth with hot water, and by the occasional introduction of two or three ounces of warm water into the rectum.

In what I have said, I have avoided speaking of details and methods; I have remembered that although some of us are younger and less experienced than others, all of us in this room are educated in the factors of surgical science, and I have therefore tried to be suggestive rather than didactic, and to avoid details except in so far as they were necessary to the elucidation of principles.

If I may reduce to formulæ the matters I have referred to, I would put them thus:—

1. That the tendency to prolong operations must be carefully guarded against, as it is a grave cause of danger.

2. That in the treatment of shock and vomiting following operation, we get no help from the stomach, and must rely on the rectum as its substitute.

3. That heat, alcohol, and opiates are our best remedies;

and that the latter are well borne, and must be intelligently used to their full effect.

4. That drugs of the class ordinarily used to check vomiting are of little or no use in the cases under consideration.

5. That ice does not relieve thirst, and does harm by introducing water into the stomach and so provoking vomiting.

SIMARUBA IN DYSENTERY.

For dysentery and summer diarrhœa Dr. Ihle recommends the following: ℞.—Decoction of simaruba, 170 grammes; cognac, 10 grammes; mucilage of salep, 10 grammes; tincture of opium, 0·5 grammes; syrup of orange peel, 25 grammes.—mix. A tablespoonful every two hours. The treatment should be preceded by a dose of castor oil.—*Les Nouveaux Remèdes*, 1895, No. 21.

OINTMENT FOR BURNS.

Dr. Haas prescribes the following for burns: ℞.—Aristol., 5 to 10 grammes; olive oil, 20 grammes; vaseline, 40 grammes; lanoline, 40 grammes.—make an ointment.—*Allg. Med. Cntrb. Ztng*, No. 72.

THE OPIUM HABIT.

Mr. V. Ball, M.D., recommends (*Medical News*, Philadelphia, LXVI., 26) the sudden and complete withdrawal of the narcotic without any other medications as the best treatment of the Opium habit. He concludes:—"Six cases have been treated by me in this manner, and although this is too small a number to draw conclusions from, yet it seems that the complete withdrawal of the drug, without symptomatic or dietetic treatment, is followed by as speedy and satisfactory results as by any other course, and the impression made by the short serious illness is not soon forgotten, and has a mental effect, which symptomatic remedies would only tend to weaken. In three of the cases the patients were much weakened on entrance, yet the danger of collapse was not encountered. In several cases in which the drug has been gradually withdrawn and the emesis and diarrhœa treated with other medicine, the suffering, though not so acute, was prolonged, and the desire persisted for a much longer period. I realise that such a treatment as is here recommended can only be well carried out behind iron bars, but hospitals for treating victims of the opium-habit are usually provided with the proper means of restraint."

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—James Little, M.D., F.R.C.P.I.

General Secretary—William Thomson, F.R.C.S.I.

SECTION OF OBSTETRICS.

President—Dr. R. D. Purefoy.

Sectional Secretary—Dr. F. W. Kidd.

Friday, March 29, 1895.

The President in the Chair.

Uterine Myoma.

Dr. Smyly exhibited the following specimens:—

Case I.—D., aged thirty-six, unmarried. The uterus was as large as a seventh-month pregnancy, and was infested by a number of myomata, one of which, as large as a Tangerine orange, occupied Douglas' pouch. The entire uterus, including the cervix, was removed by abdominal section.

Case II.—S., aged twenty-nine, married seven years, never pregnant; uterine tumour filling pelvis and reaching half way up to umbilicus; also an elastic swelling occupying Douglas' pouch. Uterus removed per vaginam (morcellement). Upon opening the uterine cavity some soft tissue, evidently malignant, escaped, and a large quantity was scraped out with a curette. The uterus having been removed, the tumour in Douglas' pouch, which proved to be a pyosalpinx as large as the closed fist, was seized with Museux forceps, but ruptured, discharging a large quantity of pus. It was then drawn out, the meso-salpinx clamped, and the tube and ovary removed. The patient made an excellent recovery, and went home on the 26th day.

Case III.—K., aged thirty-six, single. The tumour, which was somewhat larger than a fœtal head, caused distressing pressure symptoms, especially pain and retention of urine, necessitating the use of a catheter. The uterus was removed per vaginam by morcellement. The operation was an easy one, but a sloughing myoma was encountered. The patient died on the 4th day of septicæmia.

Case IV.—Epithelioma of the cervix. M'C., aged forty-eight, six children. The cauliflower growth having been thoroughly destroyed with the thermo-cautery, the uterus was removed per vaginam. The patient was up on the 8th day.

Case V.—Double pyosalpinx. The patient suffered from pelvic pain, with frequent attacks of peritonitis, and had been constantly under medical treatment for ten years. The operation was rendered very difficult by the enormous thickness of the abdominal wall. The left tube ruptured during removal, but the right was removed entire. The patient made an uninterrupted recovery.

Case VI.—Interstitial salpingitis and pyosalpinx. Patient complained of pelvic pain, amenorrhœa, leucorrhœa, and voided large quantities of pus in her urine. A large fluctuating swelling was discovered in front of the uterus, and a smaller one behind in Douglas' pouch; pulse, 105; temp., 101°–101·6° F. On opening the abdomen the omentum was found adherent to the abdominal wall, intestines, and bladder. Several coils of small intestine, firmly adherent to one another and to surrounding structures, were next encountered and were separated with considerable difficulty and not without some injury to their peritoneal covering. These defects were carefully repaired with fine sutures before proceeding further. A thin-walled cyst, about as large as a Tangerine orange, ruptured on the first attempt to separate its adhesions and proved to be the left ovary distended by a thin watery fluid. It was removed along with the greatly-thickened tube. The right ovary and tube formed a common abscess cavity, which was firmly adherent to, and communicated with, the bladder. The removal was attended with considerable difficulty. The defect in the bladder wall was carefully sutured and the pelvic cavity cleansed. The patient rapidly sank and, in spite of intravenous injection of salt and water, died in 14 hours.

Case VII.—Cystoma ovarii proliferum glandulare. The operation presented no difficulties, and was completed in ten minutes; convalescence uninterrupted.

Case VIII.—Cystoma ovarii proliferum glandulare, with twisted pedicle. The tumour was firmly adherent to the abdominal wall, bladder, and front of uterus; and as the oozing was not completely controlled by suturing the bleeding points, the cavity was finally plugged with iodoform gauze. Patient made a good recovery.

Dr. Smith wished to know with reference to the tubes removed for pyosalpinx, whether the contents of the tubes had been examined for staphylococci or streptococci.

Dr. Lane asked if there had been much hæmorrhage in the case in which the patient died 14 hours after the operation.

Dr. Dawson said that, with regard to the tubo-ovarian cystoma, he would like to know the position in which the fimbriæ were situated, as sometimes they were found inside.

Dr. Smyly, replying, said that the patient referred to by Dr. Lane died from shock and not from hæmorrhage. The fimbriæ were not turned inwards but were spread out over the wall of the cyst. He had not had the pus examined. He had seen a similar case operated on by Dr. Martin, in Berlin, in which the pus had escaped. It was examined and found to contain bacteria, which could not be microscopically distinguished from those in bad cases of puerperal fever. The case had recovered without any reaction. He thought that microscopic examination was not of much importance, as the same bacteria were found in mild and severe cases. More depended on the attenuation and age of the pus. Septic pus was worse than gonorrhœal pus.

Exhibits.

Dr. E. H. Tweedy exhibited an ovarian cystoma, which, by the kindness of Dr. Smyly, he was enabled to remove in the Rotunda Hospital. The case presented no features of any interest, and the patient made an uninterrupted recovery.

Dr. F. W. Kidd exhibited a submucous fibroid removed from the uterus by enucleation. Patient, aged thirty-nine, was twenty-two years married, had six children, the last born ten years ago. Twelve months ago a submucous fibroid had been expelled from the uterus. Patient complained of severe menorrhagia and was blanched from loss of blood. A physician in the country had diagnosticated the condition and located the tumour on the anterior wall of the uterus. First an attempt was made to get the wire of an écraseur round the tumour, but it was found to be too sessile to be removed in this way. The capsule was then incised, the fibroid caught in a strong vulsellum forceps, and the capsule separated by the finger-nail, strong traction being made on the forceps at same time. The tumour was, finally, sufficiently separated from the capsule to allow of its removal entire by slight rotatory movement of the forceps. Patient made an afebrile uninterrupted recovery, except that she got an attack of influenza about a week after operation, which lasted a few days. The tumour was the size of a hen-egg and was fibroid in nature.

Dr. Smyly remarked that it was a long time since he had used the écraseur. He thought it a very bad and unmanageable

instrument. It made an ugly wound. A piece of the uterus might be accidentally cut out by it, or a piece of the tumour might be left behind. The instrument which he had found most useful for pedunculated and non-pedunculated myomata was Schultz's spoon-forceps. If the pedicle were too wide to twist it could be snicked with a pair of scissors and then twisted out. If the tumour is embedded in the wall of the uterus and projects into the uterine cavity, this instrument is still the best. The healthy tissue is not touched. Only the part that is removed is touched. The vulsellum is inferior to the spoon-forceps, as the myoma slips through it. The drawbacks to the spoon-forceps are that the handles are uncomfortable, being like those of a scissors. In twisting the grip is liable to be lost for want of a catch, and it is not powerful enough. He had had a more powerful instrument made, with a rack by which it can be fixed when twisting, and the handles are made like a tailor's scissors.

Dr. A. Smith said he chiefly used Schultz's double spoon. He never had an écraseur. He got Smyly's instrument, but found the rack difficult to loosen quickly.

Dr. Kidd, replying, said he was very much obliged to Dr. Smyly for bringing down the instruments. It was very useful for myomatous growths. He had seen the écraseur used without its cutting off any superfluous tissue. He had not had an opportunity of seeing the wound, as the cases made an uninterrupted recovery.

The Treatment of Severe Hæmorrhage by the Infusion of Normal Saline Solution.

Dr. Glenn read a paper on this subject. [It will be found in Vol. C., page 218.]

Dr. Tweedy said that through Dr. Glenn's kindness he had seen most of the cases infused. He had himself infused eight cases which had occurred in the hospital since Dr. Glenn had left. He agreed with Dr. Glenn as to the enormous improvement that took place in the patient's pulse and appearance, but thought the improvement very transitory. He thought it had saved several lives by warding off impending syncope. He believed the saline infusion acted as a stimulant to the heart. It, however, flowed out of the vessel nearly as quick as it went in. There was free urination and perspiration. In one case fluid poured from a drainage-tube in the abdomen ten minutes after infusion. He thought that it was very rarely that the patient died from absolute want of blood. It was shock that killed her. Nearly as many

blood-corpuscles were found in a woman who died of hæmorrhage as in a chlorotic girl. The woman dies because the heart is too sluggish, not because it has nothing to contract on. He had used a simpler instrument than that shown by Dr. Glenn. If he was not absolutely sure of his asepsis he would not ligature the vein, but only put on a compress and bandage, following Sir Thornley Stoker's advice.

Dr. A. Smith had seen several cases infused with saline solution, but only with temporary improvement. He had done it two or three times himself. In one case the ligature had slipped from an ovarian pedicle. The patient was very collapsed. He reapplied the ligature and put saline solution into the abdomen and found slight improvement, which died away very soon. He then put the patient in an exaggerated Trendelenberg's position and got great improvement. The patient recovered. He looked on the case as one of auto-infusion. He had another very similar case in which Trendelenberg's position seemed to do a great deal of good. He was not a strong advocate for transfusion. He thought the principal question was, "When to transfuse?"

Dr. S. M. Thompson said he had seen transfusion used in 1866 for cholera. There was great temporary improvement, but they always died in the end.

Dr. Bate mentioned that, when in Berlin six months ago, he had seen a case of miscarriage brought in, in a state of collapse. Two or three pints of saline infusion were put into the breast, which became enormously distended. He examined the breast two or three days afterwards and found it had quite recovered its normal size. The patient derived great benefit from the injection and recovered.

Dr. Smyly said he remembered Dr. Beatty reading a paper on a case of P. P. H., in which Dr. Robert MacDonnell had infused defibrinated blood. The woman made a good recovery. When Assistant in the Rotunda he saw transfusion performed, and the woman died of pulmonary embolism. He had no hesitation in saying that there was a very great improvement on the old method. He had not seen any evil results follow from the salt-and-water method. He had seen patients recover who otherwise he did not think would have pulled through. In answer to Dr. Smith's question of—When to transfuse? formerly, by the old method he would have said, when in doubt, do not operate. Now he would say, when in doubt, operate. Salt and water was the best stimulant that could be given. He had had one patient tranfused simply for shock and not for loss of blood. He thought that the credit

of reintroducing this method in Dublin was altogether due to Dr. Glenn.

Dr. Lane agreed with Drs. Tweedy and Smith in the only temporary effect produced in the majority of cases by transfusion. He had seen Dr. Macan use an instrument very similar to Dr. Tweedy's, but which had a graduated glass jar, which was an improvement. If the effect of the saline infusion was only to stimulate a sluggish heart, the question whether alcohol or some other stimulant would not do as well would have to be considered.

The President said that the first successful case of transfusion occurred when he was at the Rotunda. It was done by Dr. R. MacDonnell, and one of the students furnished the necessary blood, 8 ounces, which was defibrinated. A much smaller quantity was used than now. It was when a secondary collapse had set in, several hours after delivery, that the transfusion was done.

Dr. Glenn, replying, said he was greatly indebted for the kind way in which his paper was received, and was especially obliged to Dr. Smyly for allowing him to do the cases. As regards the quantity infused, he thought the present results in which pints instead of ounces were used, were more favourable. Other stimulants, as alcohol and ether, were always used in conjunction with infusion of saline solution. He thought the instrument he used superior to Dr. Tweedy's. The latter would require 9 feet of tubing, if the infusion was being done into an artery, but in his he could get the necessary pressure with the syringe. In Dr. Smith's cases, the elevation of the legs could not have been the cause of the patient's recovery, considering the very small amount of blood in the legs. The advantage of Trendelenberg's position was that the abdomen was raised and pressure applied to it. The manner of infusion described by Dr. Bate was merely Munchmeyer's method into the connective tissue. It was an unsatisfactory method, as it was too slow. Infusion was very unsuccessful in cholera.

Friday, May 10, 1895.

The President in the Chair.

Specimens exhibited.

Dr. W. J. Smyly exhibited the following specimens :—1. Ovaries and tubes, removed three weeks previously from a patient in the Rotunda Hospital for chronic suppuration. The ovaries were distended with pus to the size of a Tangerine orange, and the abscess

cavities communicated with the lumen of the tubes, which were greatly thickened by interstitial salpingitis. The patient made a good recovery.

2. A small ovarian tumour, removed from a patient aged seventy. Hysteropexy was also performed for prolapse. The operation was a simple one, but though pulse and temperature continued normal, no flatus was passed. Other symptoms of ileus supervened, and, it being found impossible to relieve the obstruction, the abdomen was again opened; but the cause of obstruction not being easily found, an artificial anus was established, but the patient died. At the autopsy a coil of small intestine was found to have become strangulated in Douglas' pouch.

3. A uterus removed two days previously for sarcoma of the cervix. The patient was going on satisfactorily.

4. A ruptured tubal pregnancy operated upon that morning. The ovum had developed in the left tube, and had reached the second month.

Dr. Smith said, that some years ago he showed at this section of the Academy a specimen where a loop of intestine had passed through an opening in the broad ligament, and had become strangulated. It was discovered *post mortem*. It showed how strangulation could occur in the posterior *cul-de-sac* without any bands of peritoneum being present.

Ovarian Cystoma.

Dr. Alfred Smith showed an ovarian cystoma, which he removed from a married woman, aged twenty-nine. The diagnosis caused considerable difficulty. During the month of September, 1894, the patient felt a severe pain in right side, in the neighbourhood of the umbilicus and, shortly afterwards, felt a tumour in this region. The patient states the tumour gets larger and smaller. The sudden diminution is followed by increased quantity of urine. Examination reveals a tumour, size of small fœtal head, freely movable in every direction. It can be pushed up easily under the ribs. It is distinctly reniform, the hilum being well-marked. Drawing down the uterus to full extent, and pushing up the tumour under ribs, does not stretch the pedicle so as to convey impulse.

Operation revealed multilocular ovarian tumour, pedicle extremely long, shape distinctly that of a kidney. One of the cysts is perforated by a well defined punched out hole, through which the cyst contents escaped into the peritoneal cavity. This hole explains the sudden diminution of the size of the tumour. The recovery was rapid.

The Secretary asked whether any peritonitis was present. According to Dr. Smith's theory the tumour emptied itself through the opening into the peritoneum. The fluid in most multilocular cysts was irritating to the peritoneum.

Dr. Smyly said the tumour had a close similarity to one caused by hydronephrosis, both in its shape and in its becoming larger at times. Referring to the escape of the fluid, he said that, if the cyst was an ordinary proliferous glandular cyst, it would contain pseudo-mucin, which is not easily absorbed by the peritoneum, and which would, therefore, have been found in the peritoneum. On the other hand, if it was a papillomatous cyst the prognosis was very bad.

Dr. Smith, replying, said there was no evidence of peritonitis except that there was a fair amount of ascites present. He hoped that it was not a papillomatous cyst.

Uterus removed by Vaginal Hysterectomy.

Dr. Glenn exhibited, for Dr. Atthill, a uterus removed by vaginal hysterectomy for epithelioma of cavity.

Dr. Smyly thought that in cases of cancer of the body, not involving the cervix, that removal by ligature was the best method, as the uterus had not then to be opened. The uterus might, however, be too large to remove entire.

Dr. F. W. Kidd *exhibited Sub-mucous Fibroid removed by Enucleation.*

History as follows:—S. L., aged forty-three years; married 13 years; 6 children; last pregnancy 4 years ago; admitted to hospital 5th April, 1895, complaining of menorrhagia and metrorrhagia for last 18 months; has pain in front and back of abdomen. Patient quite blanched, vaginal mucous membrane being quite white. She was told six months ago there was "something wrong" with the womb. On examination, uterus enlarged, almost to size of full-term fœtal skull, bulging especially in anterior *cul-de-sac*. To clear up the diagnosis, on 29th April the mucous membrane was curetted off the tumour; cavity of the uterus measured 4½ inches, and tumour was situated in anterior uterine wall. On night of 1st May five sea-tangle tents were introduced into uterus, but, unfortunately, four of them slipped too far into the cavity of the uterus. On the following morning patient was anæsthetised, and the cervix having been divided bi-laterally with scissors, tumour larger than a goose-egg was enucleated by the finger, assisted by the vulsellum-forceps and scissors; uterus was torn posteriorly in delivering the tumour after it was separated, but the laceration did

not involve the peritoneum, and was afterwards stitched. The cavity of the uterus was packed with iodoform gauze. When this was removed the cavity was irrigated by Bozeman's catheter. Temperature rose to 103° next day, but quickly fell to normal, and has remained so since.

Notes on a Case of Imperforate Anus entailing Colotomy, with Frozen Section.

Dr. Kidd, having gone into the statistics of the frequency of the occurrence of this deformity, quoted from Professor M'Alister, Dr. Ball, and Drs. Cooper and Edwards, to explain the different theories put forward to explain this abnormal condition, read the following history:—The case undoubtedly belonged to Class IV. in Bodenhamer's classification—namely, to those in which the "anus is normal, rectum, at variable distance, either obstructed by membrane or occluded for a greater or less distance."

On the 26th January, 1895, Mrs. M. P., aged thirty-three, on her 12th pregnancy, was delivered of a female child; the second stage lasted 5 hours 55 minutes. Note says: "Second stage delayed by deformity of coccyx" (probably misplacement forwards). Note on third day stated: "Baby not well, has passed water, but bowels have not acted since birth." An endeavour was then made to introduce a small soap suppository, but this failed. When the child was examined the abdomen was found distended, the anus was normal for a distance of about half an inch, but even a fine probe could not be passed any further. It was then determined to try and reach the *cul-de-sac* of the bowel from the anus, but the attempts were unavailing. Certainly, in this case, there did not exist any chord-like structure that might serve as a guide to the bowel, nor when separating the tissues (although, as may be seen by the specimen, the top of the little finger was within about $\frac{1}{16}$th of an inch of the *cul-de-sac*) was there ever felt any impulse when the child cried, nor was there any indication from the sense of touch that the *cul-de-sac* of the intestine was so near. The tissues were divided with a fine tenotome and scissors for some distance backwards from the anus towards the tip of the coccyx, afterwards exploring as carefully as possible with the tip of the little finger. To any person who has not tried it, this procedure may seem very simple, but, in practice, it is astonishing how little room there is between the rami of the ischia in a new-born infant when a finger, even the smallest, is in the anus—the whole operation seems one of haphazard. The advice given by most authorities to keep close to the anterior surface of the coccyx

was followed. An endeavour to get a view of the tissues being dissected by means of a spring wire nasal speculum of small size was a failure. Amussat has recommended the removal of the coccyx as a step of the operation, it allows so much more room. On looking at the specimens now exhibited this is quite evident, and it is a matter of regret that recourse was not had to this procedure in this case. Failing to reach the bowel, the wound was well powdered with boric acid and dressed with a little iodoform gauze and gauze tissue. On the following day another attempt was made to reach the rectum from the anus, but with no more success than the first. No cutting was done with the knife that could not be reached with the finger tip. It was astonishing how the child stood the operation of the previous day, and how very little oozing there had been from the wound. Finding all endeavours futile, it was determined to try a left inguinal colotomy. This was done successfully, but the child only survived six days, dying when it was ten days old. The colotomy relieved it, but it sank from exhaustion. At the *post-mortem* there was no evidence of any peritonitis. A point of interest during the colotomy was that when the peritoneum was on the director it was so thin and diaphanous that a student standing quite close said there was no tissue of any kind on the director. The points of interest as they present themselves are:—1st, the extreme beauty of the specimen, showing so clearly as it does the exact relation of all the parts; notably, the height to which the empty bladder extends above the level of the uterus. This section was prepared by Dr. Dixon, of the Trinity College School of Anatomy. 2nd, the absence of any chord-like structure that would act as a guide to the termination of the rectal *cul-de-sac*. 3rd, the very small amount of oozing from the anal wound, after two attempts had been made to reach the bowel. 4th, absence of any evidence of peritonitis after death. 5th, although the tip of the little finger could be got within $\frac{1}{16}$th of an inch of the rectal *cul-de-sac*, there was no evidence from bulging or from any impulse conveyed by the child crying that the bowel was so close. 6th, considering the distance of the bowel from the anus, could the rectum have been successfully freed and drawn down so as to stitch it to the anus? The specimens and the history of the case are of sufficient interest to bring before this Section, as it might be the lot of any obstetrician to meet a case such as that just described. The object of these notes is that they may have the effect of eliciting from any members of this Section who may have met with similar cases, their histories and the methods adopted in treating this very unusual deformity.

Dr. Glenn said they were very grateful for the opportunity of seeing the frozen section. In two cases he had seen operated on in the Rotunda one had recovered, but in the other the rectum could not be found. He would remove the coccyx if he had a case similar to that of Dr. Kidd's. He would prefer a Littré's operation to a loin operation. The advantage of a Littré's operation was that after the bowel was opened one could wait till the child got stronger, and then, by passing down a bougie it could be cut on through the anus. If the rectum was brought down and stitched to the anus there was great trouble in keeping it dilated afterwards. In this case he thought everything was done that could have been done.

Dr. Smith, when Assistant Master at the Rotunda, had operated on a case, and had succeeded in opening into the rectum. He stitched the rectum to the anus. The child only lived a few days. Except when there was only a simple membrane between the rectum and anus, he had not seen any cases operated on which had recovered.

Dr. Kidd, replying, said that the chief interest depended on the frozen section, which was beautifully made and mounted. He had not intended the colotomy to be a permanent operation. If the child had recovered he intended exploring further from the false anus. But the child gradually sank after the operation.

Dr. A. J. Smith's Specimen described in Vol. C., page 259.

Dr. M'Weeney's report on Dr. A. J. Smith's specimen:—

The specimen consists of two cystic structures, evidently ovaries (right and left). The larger would, if distended, about equal the size of the fœtal head at full term. Adherent to it is a piece of normal-looking oviduct 11·2 cm. long, terminating at one end in the fimbriated extremity, whilst the other end is a cut surface corresponding to part of the pedicle. The outer and inner wall of this cyst are tough, fibrous, and smooth, without papillary or other excrescences. The cyst contains a smaller one. That part of the wall of the larger cyst that corresponds to the ovary is common to both; for the rest of its extent the smaller cyst has walls of its own. It has no excrescences. The outer ovary has also a piece of oviduct 5 cm. long, adherent to it. The bond of union consists of a rather wide strip (3 cm.) of broad ligament. The piece of oviduct in question is thicker than its fellow, and possesses better developed fimbriæ. About 1·5 cm. from the divided end, there is a flat, wart-like, slightly elevated outgrowth, as large as a threepenny piece. On section this appears hollow, and fitted with loose friable material arranged in thin folded

plates. To the naked eye this looks like a localised bulging of the lumen of the tube, with thickening of the mucous membrane. On microscopic examination this proved to be the case. The tumour adherent to this Fallopian tube is as big as a large hen's egg, and consists of a solid and a cystic portion. The latter has the broad ligament inserted into its outside wall, which is smooth, semi-transparent from tenuity, and yellowish. On being opened, this cyst is found to contain a mass of white brittle material, which is evidently paralbumen, coagulated by alcohol. The solid part, which is by far the smaller, contains a cavity, filled with blood clot. This cavity is roughly circular and 16 mm. in diameter. Near it are several smaller cysts averaging the size of a pea, and containing coagulated albuminous material. These are all embedded in a tough, fibrous, stroma. Finally, almost at the line of insertion of the broad ligament into the large cyst, there is a narrow strip shut off from the latter by a septum, and sub-divided into several loculi by secondary septa. These loculi have smooth walls, and contain coagulated albuminous material. Microscopically, several of these smaller cysts are lined with cubical epithelium, whilst others, if they ever possessed such a lining, have lost it. One is lined with several layers of nucleated cells, the margins of which are indistinct and their nature doubtful. They resemble the so-called *discus proliferus* of the Graafian follicle. The only other point of interest is the supervention of colloid degeneration, which affects areas of the fibrous structure, intervening between the cysts, over considerable areas, and gives the typical reactions of this substance. To sum up, the conditions are not unfrequently encountered, but their occurrence in both ovaries of the same patient is a matter of some interest.

The Section then adjourned.

SECTION OF SURGERY.

President—Sir Thornley Stoker, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—Kendal Franks, F.R.C.S.I.

Friday, April 26, 1895.

The President in the Chair.

Excision of the Rectum.

Mr. Heuston read a paper on this subject. [It will be found in Vol. C., page 193.]

The PRESIDENT said that within the last few years the treatment of cancer of the rectum had attained a very satisfactory development. He entirely disagreed with Mr. Heuston regarding the removal of cancer of the rectum by the perineal as compared with the trans-sacral operation. He had at present two patients in the Richmond Hospital, both of whom he could not have ventured to touch by the perineal method. He did not dread the opening of the peritoneum. Cancer of the middle third of the rectum could not be removed by the perineal operation without opening the peritoneum—if, as Mr. Heuston stated, the peritoneum often came down to within $1\frac{1}{2}$ to 2 inches of the sphincter. It was better to open the peritoneum by an operation which gives a perfect view, such as the trans-sacral does. Personally he preferred the lateral semiprone position to having the patient placed on his back. The last modification of the trans-sacral operation is a conservation of the sacrum. He doubted if any very complete conservation of the sacrum was desirable, as the anus was placed very high up. The dangers in the trans-sacral operation were less than from the blindfold operation of groping in a pool of blood through the perinæum. One danger was the infection of the wound by the discharge from the bowel. In both of his cases he had applied a circular ligature round the rectum, intending to remove it if the patient had any vomiting or intestinal symptoms. It sloughed away of itself in 48 hours. In the meantime a copious lymph exudation had taken place in the wound. In this operation there was hardly ever any necessity to remove the coccyx. He did not remove it in his last case. He removed the lower part of the sacrum. If the coccyx was in the way it was quite easy to split it in two and turn the halves aside.

MR. BALL said Mr. Heuston's paper had raised what the President had described as a test between the perineal and trans-sacral excision of the rectum. He did not think there was any doubt that both of these operations had their right place. The perineal excision of cancer must be kept for a very small minority of cases in which the disease is very close to the anus. The so-called trans-sacral operation need not necessarily be a trans-sacral one when the cancer was low down. Quite sufficient room could be got by dividing the coccyx from the sacrum without cutting the sacrum at all. The additional room gained by removing the sacrum is very great indeed. Only yesterday he had seen a lady in whom he had divided the sacrum trans-sacrally two years ago. At the time he was quite unable to estimate the extent of the disease. He had relied simply on the fact that the tumour

was freely movable in the pelvis. He thought that was a very important point in deciding whether a case was one for operation or not. In this case he had to remove nearly the whole of the rectum and, perhaps, part of the sigmoid flexure—in all six inches. He had then to divide the mesentery of the rectum or sigmoid flexure to some extent, so as to be able to bring down the intestine sufficiently to stick it to the intestine and anus left in the floor of the pelvis. It was an ideal result: complete and absolute union between the upper and lower parts of the intestine. The floor was not disturbed. The operation had been conducted above the levatores ani. One could not always expect to get such a result as this. He did not quite follow Mr. Heuston's description of the operation he performed. Did the incision from the anus to the coccyx involve the anus or start outside it? If it did not involve the anus it was the operation selected by everybody in suitable cases. The coccyx could be excised, or the sacrum, up to the 3rd sacral foramen. Above this foramen the bladder would be paralysed.

Mr. Croly said that Mr. Heuston stated some of his patients suffered from intense pain. His experience of cancer of the rectum was that it was constantly overlooked till it had gone on too far. If he could not get his finger above the diseased part, he either left the case alone or did a colotomy. He thought the fact whether the lymphatic glands were implicated or not, was a very important point. He would like to know the condition of the patient in a few months.

The President said that in one of his cases he found considerable implication of the lymphatic glands, and that he readily removed them as high as the brim of the true pelvis. The trans-sacral operation gave great opportunity for examining the pelvis.

Mr. Franks said that in a case of cancer of the rectum high up, he would prefer a trans-sacral operation. Of all situations in the body, with the exception of the lower lip, cancer of the rectum offers the best hopes of non-recurrence. The disease usually lasts a considerable time before it invades the glands. Mr. Heuston's case was one in point. In a case which he had operated on the disease involved the anus, and extended up three inches. He removed the whole anus, and brought down the bowel and sutured it to the skin. He saw her nine years after operation and there was no return of the disease. She had no trouble although she had had no sphincters during this time. In another case in which the disease extended as high up as he could feel, he had considerable difficulty in removing the rectum, and afterwards discovered that

the disease had been treated elsewhere by caustics and the cautery. This case lived for three years, after which he lost sight of the patient. If the growth were irremovable the French method of proctotomy was better, in his opinion, than colotomy.

Mr. Wheeler said that with regard to the recurrence of cancer of the rectum, his experience was not so favourable as Mr. Franks'. He did not agree with him that patients objected to colotomy. They might have disliked the lumbar form.

Sir W. Stokes said that up till now he had followed the teaching of Professor Syme, who laid down that all cases of cancer of the rectum that were beyond the reach of the finger were unfit for operation. Now, however, he had changed his opinion. He had only operated on cases in which the disease was near the anus by the old perineal operation. His results were mostly very satisfactory.

Mr. Thomson believed that prognosis of cancer of the rectum was more favourable than of cancer in most other parts of the body. When the cancer was close to the anus he agreed with Mr. Ball that the perineal operation was the proper one to adopt. When the disease was higher up he had no doubt that the trans-sacral was the best. It gave most room and enabled the parts around the seat of the disease to be thoroughly examined. There was very little hæmorrhage and it was easily controlled.

Mr. Heuston, replying, said he did not recommend the perineal operation in a certain class of cases. He did not agree with the President that the peritoneum must be opened if the disease occurs in the middle portion of the rectum. On the anterior aspect, the rectum could be removed as high as the prostate; on the lateral aspect $4\frac{1}{2}$ inches of the bowel could be removed, and 5 inches on an average behind, without opening the peritoneum. If the peritoneum was opened it could be effectively closed by the deep row of sutures. He agreed that the trans-sacral operation is the best where the disease is high up in the bowel, or where there is much implication of the glands of the pelvis. The glands cannot be cleared out in the perineal operation. In making his incision he went clean through from the anus, as he got more room. His experience of colotomy was such that he would never perform the operation unless driven to it. His experience of it was that it did not relieve the patient of pain.

The Section then adjourned.

SECTION OF PATHOLOGY.

President—Dr. J. A. Scott.

Sectional Secretary—J. B. Story.

Friday, May 17, 1895.

The President in the Chair.

Aneurysm of Abdominal Aorta.

Mr. H. Gray Croly and Dr. Graves showed an aneurysm of the abdominal aorta which had commenced posterior to cæliac axis. The sac of the aneurysm had become firmly adherent to the lumbar vertebra, and had also firm adhesions with the left side of the diaphragm and left psoas muscle. There had been no symptoms of aneurysm during life, no pulsation, no pain in back, although the anterior surfaces of the first dorsal and first and second lumbar vertebræ were eroded, pain in the region of left kidney alone being complained of. The kidney was displaced downwards by aneurysm. Death took place suddenly from rupture through the diaphragm into left thorax.

Dr. M'Weeney wished to know the mechanism by which an aneurysm situated behind the cœliac axis ruptured into the left pleural cavity. In the section of the kidney there was only a small part which showed increased connective tissue, with a few atrophied glomeruli. He did not consider that sufficient to make it a granular kidney. The kidney also presented a smooth surface. A short time ago he saw a case in which an aneurysm, situated in the middle of the dorsal region of the aorta, had ruptured into the substance of the lung and not into the pleural cavity. The man fell dead, and blood gushed from his mouth and nose.

Mr. Croly said that the man was admitted and treated for kidney disease. The only explanation he could give of the absence of pulsation was, that the tumour was bound down by very strong adhesions.

Dr. Graves, in reply to Dr. M'Weeney, said that the aneurysm had become glued to the psoas muscle, and had eroded it and shoved it up, and that it had then burst through the diaphragm. He agreed with him that the kidney only showed interstitial changes in one part.

Syringomyelia.

Dr. J. O'Carroll exhibited the brain and spinal cord of a case of syringomyelia.

Dr. McWeeney said the case was absolutely unique in his experience. The only part that he had as yet been able to make sections of was in the cervical region. The section was stained by Pal's method. The central canal was lined by the usual columnar epithelial cells. At each lateral aspect there was a cleft or aperture through which the central canal communicated with two wing-shaped cavities, which extended back to the exit of the posterior nerve roots. There were then two things which had occurred. One a dilatation of the pre-existing central canal, and the second a channeling out of the grey matter on each side of the cord. There was no evidence of neuroglia either of new formation or of embryonic origin. The cavity in the grey matter was bounded by inspissated gray matter. The dilatation of the cavities of the central nervous system must have been forming many years before he suffered from the spinal cord symptoms. Then it suddenly opened out the gray matter on each side of the cord, forming there two large cleft-like cavities, extending through its whole length. In the cervical region there was a small aperture between the central canal and the canal in the gray matter. This aperture gradually widened out, so that in the dorsal region there was no division between the two canals. The sclerosis was chiefly situated in the white matter of the posterior columns.

Hydatid Cyst of the Arm.

Dr. McWeeney showed a specimen of hydatid cyst evacuated together with a quantity of pus from a painless swelling of the upper and lower part of the arm. The patient was a lady aged about thirty, under the care of Mr. P. J. Hayes. She had first noticed the swelling about a year before operation. The cyst was about the size of a plum, and floated in the pus of the abscess. It contained two nodules projecting from its inner wall. The smaller of these proved to be a typical barrel-capsule of T. echinococcus. A remarkable feature was the presence of a large number of calcareous granules which from their size and resemblance to each other bore a close similarity to ova. The occurrence is rare in Ireland.

Intra-ocular Sarcomata.

Mr. Story and Dr. Graves made a communication upon ocular sarcomata, and exhibited two eyeballs with tumours springing from the corneo-scleral margin, and one with a tumour in the anterior portion of the chorioidea, which had perforated the sclerotic. All these tumours were pigmented in only a portion of their extent, and

were mostly formed of spindle cells. The chorioidal sarcoma was of the alveolar type. The patient in whom the latter tumour occurred was a lady, aged thirty-three. She lived in good health for ten years after the enucleation, and then died with symptoms of secondary growths in the liver. The other tumours occurred in males—No. 1 in an officer, aged fifty-seven, and No. 2 in a pensioner, aged seventy-six. The ultimate fate of these patients was unknown.

Mr. Croly said it was very interesting the length of time which people lived with these growths in their orbits. Sarcomata occurring elsewhere appeared to be more rapidly fatal.

Chronic Articular Rheumatism.

Dr. Bennett read a paper upon the limitation of chronic articular rheumatism to parts of joints.

Dr. Bennett, referring to the extraordinary polish shown by the pisiform bone in one of the specimens, said that where there was the least range of movement there was always the greatest amount of polish.

Three Cases of Fracture of the Fibula.

Dr. E. H. Bennett stated the details of three cases of fracture of the fibula, with dislocation of the ankle joint, which had united with great deformity, which he had been able in great measure to rectify by extension and manipulation. The cases had been left unreduced for periods respectively of a month, six weeks, and lastly, three months. He pointed out the error of regarding Pott's fracture as the commonest injury of the fibula, found associated with dislocation of the ankle. He showed by the series of fractures collected in the museum of Trinity College and by his own clinical experience, that the oblique fracture of the external malleolus caused by traction acting through the external lateral ligament, is of much more frequent occurrence than the classical Pott's fracture.

Mr. Croly said that the fibula was not usually fractured as high up as originally described by Pott. If there is great tenderness over the lower end of the fibula when pressed on there is a fracture there. Very often it does not present the typical appearance of a Pott's fracture, the foot not being displaced. Pott never mentioned anything about the tip of the internal malleolus being knocked off.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.;
F.R.C.P.I.; F. R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, November 30, 1895.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30.		Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30.
Armagh -	21·0	7·0	21·0	7·0	Limerick -	30·9	26·7	19·6	42·1
Belfast -	32·1	21·4	22·1	27·1	Lisburn -	8·5	25·7	4·3	8·5
Cork -	28·4	20·1	20·8	24·9	Londonderry	22·0	14·1	18·8	23·6
Drogheda -	17·6	13·2	13·2	22·0	Lurgan -	31·9	31·9	13·7	27·4
Dublin -	23·1	22·7	23·0	24·6	Newry -	28·2	20·1	40·2	8·1
Dundalk -	4·2	20·9	12·6	12·6	Sligo -	15·2	50·8	30·5	10·2
Galway -	26·4	22·7	18·9	15·1	Waterford -	22·5	25·0	15·0	40·0
Kilkenny -	18·9	33·0	9·4	23·6	Wexford -	9·0	31·6	13·5	18·1

In the week ending Saturday, November 9, 1895, the mortality in thirty-three large English towns, including London (in which the rate was 21·2), was equal to an average annual death-rate of 22·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·4 per 1,000. In Glasgow the rate was 21·6. In Edinburgh it was 16·3.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 25·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in eleven of the districts to 4·6 in Belfast—the

168 deaths from all causes registered in that district comprising 3 from measles, 3 from scarlatina, 4 from whooping-cough, 9 from enteric fever, and 5 from diarrhœa. The Registrar for Castlereagh No. 4 District, Belfast Union, remarks—"Measles and scarlatina very prevalent."

In the Dublin Registration District the registered births amounted to 186—95 boys and 91 girls; and the registered deaths to 163—82 males and 81 females.

The deaths, which are 12 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·3 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 23·1 per 1,000. During the first forty-five weeks of the current year the death-rate averaged 28·7, and was 1·7 over the mean rate in the corresponding period of the ten years, 1885–1894.

Only 10 deaths from zymotic diseases were registered, being 15 below the average registered in the corresponding week of the last ten years, and 9 under the number in the previous week. They consist of 2 from influenza and its complications, 1 from whooping-cough, 1 from diphtheria, 4 from enteric fever, 1 from choleraic diarrhœa, and 1 from diarrhœa.

Only 2 cases of small-pox were admitted to hospital, being 1 under the admissions in the preceding week and 2 under the number registered in the week ended October 26. Four small-pox patients were discharged and 14 remained under treatment on Saturday, being 2 under the number in hospital at the close of the preceding week.

The number of cases of enteric fever admitted to hospital was 15, being 1 under the admissions in the preceding week and 2 over the number admitted in the week ended October 26. Thirteen patients were discharged, 3 died, and 92 remained under treatment on Saturday, being 1 under the number in hospital on that day week.

The weekly number of cases of scarlatina admitted to hospital, which had fallen from 19 in the week ended October 19 to 17 in the following week and to 13 in the week ended November 2, rose again to 19. Twenty-one patients were discharged and 104 remained under treatment on Saturday, being 2 under the number in hospital at the close of the preceding week.

Deaths from diseases of the respiratory system, which had risen from 21 in each of the three weeks ended respectively October 12, 19, and 26, to 51 in the week ended November 2, fell to 30, or 6

below the average for the corresponding week of the last ten years. The 30 deaths comprise 23 from bronchitis and 6 from pneumonia or inflammation of the lungs.

In the week ending Saturday, November 16, the mortality in thirty-three large English towns, including London (in which the rate was 17·9), was equal to an average annual death-rate of 19·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·5 per 1,000. In Glasgow the rate was 18·5, and in Edinburgh it was 17·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·5 per 1,000, the rates varying from 0·0 in eleven of the districts to 7·6 in Galway—the 6 deaths from all causes registered in that district comprising 2 from scarlatina. Among the 112 deaths from all causes registered in Belfast are 4 from measles, 5 from scarlatina, 1 from whooping-cough, 1 from diphtheria, 1 from simple continued fever, 2 from enteric fever, and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 205—109 boys and 96 girls; and the registered deaths to 155—73 males and 82 females.

The deaths, which are 27 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·1 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 22·7 per 1,000. During the first forty-six weeks of the current year the death-rate averaged 28·5, and was 1·5 over the mean rate in the corresponding period of the ten years, 1885-1894.

The number of deaths from zymotic diseases registered was 15, being 5 over the low number for the preceding week, but 5 below the average for the forty-sixth week of the last ten years. The 15 deaths comprise 2 from small-pox, 3 from influenza and its complications, 2 from enteric fever, 2 from diarrhœa, and 1 from cerebro-spinal meningitis. The deaths from small-pox are those of a woman aged 30 years, vaccinated, and a man aged 38 years, unvaccinated.

Three cases of small-pox were admitted to hospital, against 2 admissions in the preceding week and 3 in the week ended November 2. Four small-pox patients were discharged, 2 died, and 11 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

The number of cases of enteric fever admitted to hospital was 9, being 6 under the admissions in the preceding week, and 7 under those in the week ended November 2. Sixteen patients were discharged, 1 died, and 84 remained under treatment on Saturday, being 8 under the number in hospital at the close of the preceding week.

Only 7 cases of scarlatina were admitted to hospital, being 12 under the admissions in the preceding week and 6 under the number for the week ended November 2. Twenty-four small-pox patients were discharged, and 87 remained under treatment on Saturday, being 17 under the number in hospital on that day week.

Forty-four deaths from diseases of the respiratory system were registered, being 5 in excess of the average for the corresponding week of the last ten years, and 14 over the number in the previous week. They comprise 24 from bronchitis and 19 from pneumonia or inflammation of the lungs.

In the week ending Saturday, November 23, the mortality in thirty-three large English towns, including London (in which the rate was 17·7), was equal to an average annual death-rate of 19·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·1 per 1,000. In Glasgow the rate was 18·4, and in Edinburgh it was 16·5.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 21·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in ten of the districts to 2·9 in Belfast—the 116 deaths from all causes registered in that district comprising 2 from measles, 4 from scarlatina, 2 from typhus, 2 from whooping-cough, 2 from diphtheria, 2 from enteric fever, and 1 from diarrhœa. Among the 30 deaths from all causes registered in Cork are 2 from enteric fever and 2 from diarrhœa. The 14 deaths in Limerick comprise 1 from typhus and 1 from enteric fever.

In the Dublin Registration District the registered births amounted to 155—75 boys and 80 girls; and the registered deaths to 160—70 males and 90 females.

The deaths, which are 18 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·9 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 23·0 per

1,000. During the first forty-seven weeks of the current year the death-rate averaged 28·4, and was 1·4 over the mean rate in the corresponding period of the ten years, 1885–1894.

Seventeen deaths from zymotic diseases were registered, being 2 over the low number registered in the preceding week, but 3 below the average for the forty-seventh week of the last ten years. They comprise 2 from scarlet fever (scarlatina), 1 from influenza, 1 from simple continued fever, 2 from enteric fever, 5 from diarrhœa, and 1 from erysipelas.

Three cases of small-pox were admitted to hospital, being equal to the number of cases of that disease admitted during the preceding week. Three small-pox patients were discharged and 11 remained under treatment on Saturday, being equal to the number in hospital on that day week.

Nine cases of enteric fever were admitted to hospital, being equal to the admissions in the preceding week, but 6 under the number admitted in the week ended November 9. Fourteen patients were discharged, 2 died, and 77 remained under treatment on Saturday, being 7 under the number in hospital at the close of the preceding week.

The weekly number of cases of scarlatina admitted to hospital, which had fallen from 19 for the week ended November 9 to 7 for the following week, rose to 15. Fifteen patients were discharged, 2 died, and 85 remained under treatment on Saturday, being 2 under the number in hospital on that day week.

The number of deaths from diseases of the respiratory system registered was 33, being 5 below the average for the corresponding week of the last ten years, and 11 under the number for the previous week. The 33 deaths comprise 25 from bronchitis and 6 from pneumonia or inflammation of the lungs.

In the week ending Saturday, November 30, the mortality in thirty-three large English towns, including London (in which the rate was 17·3), was equal to an average annual death-rate of 17·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·4 per 1,000. In Glasgow the rate was 16·4, and in Edinburgh it was 17·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 25·3 per 1,000 of the population.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in eleven of the districts to 7·0 in Limerick—the 30 deaths from all causes registered in that district

comprising 2 from scarlatina, 2 from typhus, and 1 from enteric fever. Among the 142 deaths from all causes registered in Belfast are 3 from measles, 5 from scarlatina, 4 from whooping-cough, 4 from enteric fever, and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 166—76 boys and 90 girls; and the registered deaths to 168—94 males and 74 females.

The deaths, which are 14 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·1 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 24·6 per 1,000. During the forty-eight weeks of the current year the death-rate averaged 28·4, and was 1·4 over the mean rate in the corresponding period of the ten years, 1885–1894.

Only 11 deaths from zymotic diseases were registered, being 10 below the average for the corresponding week of the last ten years, and 6 under the number for the previous week. They consist of 1 from measles, 1 from scarlet fever (scarlatina), 1 from influenza, 2 from whooping-cough, 1 from diphtheria, 4 from enteric fever, and 1 from diarrhœa.

The number of cases of small-pox admitted to hospital was 2, being 1 under the admissions in each of the two weeks preceding. Four small-pox patients were discharged and 9 remained under treatment on Saturday, being 2 under the number in hospital on that day week.

Ten cases of enteric fever were admitted to hospital, against 9 admissions in the two weeks preceding: 14 patients were discharged, 2 died, and 71 remained under treatment on Saturday, being 6 under the number in hospital on that day week.

The number of cases of scarlatina admitted to hospital amounted to 25, being 10 in excess of the admissions in the preceding week, and 18 over the number in the week ended November 16. Nineteen patients were discharged and 91 remained under treatment on Saturday, being 6 over the number in hospital at the close of the preceding week.

Deaths from diseases of the respiratory system, which had fallen from 44 in the week ended November 16 to 33 in the following week, rose to 42, but this number is 2 below the average for the forty-eighth week of the last ten years. The 42 deaths comprised 25 from bronchitis and 15 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat 53° 20′ *N., Long.* 6° 15′ *W., for the Month of November*, 1895.

Mean Height of Barometer,	29·776 inches.
Maximal Height of Barometer (on 24th, at 9 p.m.),	30·447 „
Minimal Height of Barometer (on 10th, at 9 30 p.m.),	28·490 „
Mean Dry-bulb Temperature,	46·1°.
Mean Wet-bulb Temperature,	44·1°.
Mean Dew-point Temperature,	41·8°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·266 inch.
Mean Humidity,	85·8 per cent.
Highest Temperature in Shade (on 15th),	58·8°.
Lowest Temperature in Shade (on 4th),	34·3°.
Lowest Temperature on Grass (Radiation) (on 18th),	28·8°.
Mean Amount of Cloud,	60·0 per cent.
Rainfall (on 21 days),	3·582 inches.
Greatest Daily Rainfall (on 15th),	·890 inch.
General Directions of Wind,	W.S.W., S.W., and E.

Remarks.

November, 1895, proved an open, dull, squally and rainy month in the neighbourhood of Dublin. It was perceptibly warmer than October, and no frost was recorded in the thermometer-screen in the city. On the grass the thermometer fell to or below 32° on 5 nights only, compared with 12 nights in October. The range of pressure was great—nearly 2 inches. Only twice in the last thirty years has November been milder than in the present year—in 1881, when the mean temperature was as high as 50·3°, or 5·6° above the average, and in 1894, when the mean temperature was 47·8°, or 0·8° above that of the month now under review.

In Dublin the arithmetical mean temperature (47·0°) was decidedly above the average (44·7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 46·1°. In the thirty years ending with 1894, November was coldest in 1878 (M. T. = 38·2°), and in 1870 (M. T. =42·2°), warmest in 1881 (M. T. = 50·3°). In 1886, the M. T. was as high as 46·4°; in the year 1879 (the "cold year") it was 43·9°; in 1887 it was 42·6°; in 1888, 47·5°; in 1889, 46·4°; in 1890, 45·3°; in 1891, 43·4°; in 1892, 46·9°; in 1893, 43·8°; and in 1894, 47·8°.

The mean height of the barometer was 29·776 inches, or 0·084

inch below the corrected average value for November—namely, 29·860 inches. The mercury rose to 30·447 inches at 9 p.m. of the 24th, having fallen to 28·490 inches at 9 30 p.m. of the 10th. The observed range of atmospheric pressure was, therefore, 1·957 inches—that is, slightly less than two inches.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 46·1°, or 1·4° above the value for October, but 11·4° below that for September, 1895. The arithmetical mean of the maximal and minimal readings was 47·0°, compared with a twenty-five years' average of 44·7°. On the 15th the thermometer in the screen rose to 58·8°—wind, S.W.; on the 4th the temperature fell to 34·3°—wind, calm. The minimum on the grass was 28·8°, also on the 18th.

The rainfall was 3·582 inches, distributed over 21 days—the rainfall and the rainy days were considerably above the average. The average rainfall for November in the twenty-five years, 1865–89 inclusive, was 2·452 inches, and the average number of rainy days was 17·0. In 1876 the rainfall in November was large—3·614 inches on 20 days. In 1872, also, 3·414 inches fell on 24 days; in 1887, 3·012 inches fell on 18 days; in 1888, 6·549 inches fell on 26 days; in 1890, 4·212 inches fell on no less than 27 days; in 1891, 2·911 inches fell on 15 days; in 1892, 2·404 inches on 19 days. On the other hand, the rainfall in 1889 was only ·929 inch on 9 days; in 1870, only 1·218 inches on 11 days; in 1879, 1·251 inches on 10 days; in 1893, 1·870 inches on 17 days; and in 1894, 1·482 inches on 15 days.

High winds were noted on 15 days, and attained the force of a gale on seven occasions—the 5th, 6th, 10th, 11th, 15th, 16th, and 19th. The atmosphere was more or less foggy in Dublin on the 3rd, 4th, 8th, 27th, 28th, and 29th.

Lunar halos were seen on the 4th and 30th. Hail fell on the 16th.

The first two days of the month were quiet and fine, cloudy and mild, with a high barometer and moderate south-easterly winds. Much cirrus came up from S. on the afternoon of Saturday, the 2nd.

The weather was of the south-westerly and unsettled type throughout the week ended Saturday the 9th, and the distribution of atmospheric pressure was cyclonic—one depression of great intensity passing across the British Islands on Tuesday and Wednesday. At 6 p.m. of the former day the barometer was down to 28·47 inches at Belmullet, Co. Mayo, while it stood as high as 30·17 inches at Nice. This large difference of pressure was

attended by fresh or strong south-westerly gales over the greater part of Western Europe, and rain fell freely in many districts. Before this disturbance arrived, several shallow depressions existed, so that the weather was changeable. In Ireland, owing to slight baric gradients, a good deal of fog formed and temperature became very low on Sunday night—the sheltered minima being 34° in Dublin and at Belmullet, 31° at Valentia Island, and 27° at Parsonstown. Temperature rose fast on Tuesday, as the deep cyclonic system approached, and remained above the average until Saturday, when a "chill" spread over Ireland from the westward. In South London the thermometer rose to 61° on Wednesday and 60° on Thursday. On Friday a secondary complex depression brought heavy rains to the S. and S.E. of England, but the weather improved in Ireland. In Dublin the mean height of the barometer was 29·617 inches, pressure ranging from 29·934 inches at 9 a.m. of Sunday (wind, S.E.) to 28·871 inches at 5 p.m. of Tuesday (wind, S.). The corrected mean temperature was 47·0°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 45·8°. On Monday the screened thermometers fell to 34·3°, on Wednesday they rose to 56·7°. The prevailing wind was S.W. The rainfall measured ·974 inch on six days, ·500 inch being registered on Tuesday. On Friday the thermometer at Biarritz rose to 79° in the shade, and the temperature at that station at 8 a.m. of Saturday was 73°.

Cyclonic conditions and weather of the south-westerly type (that is, unsettled, rainy, squally, and with rapid alterations in temperature) held throughout Western and Northern Europe during the whole week ended Saturday the 16th. On Sunday a vast depression of great depth advanced rapidly towards the British Islands from S.W. Even in Dublin the barometer sank to 28·490 inches at 9 30 p.m., but much lower values were recorded in the extreme N.W. and N., and at 8 a.m. of Monday the reading of 28·23 inches was noted at Sumburgh Head in the Shetlands. The barometer had not been as low as 28·490 inches in Dublin since October 13, 1891, when it read 28·251 inches at 3 30 p.m. Severe S.W. gales resulted, and large quantities of rain fell over the whole kingdom. Monday was changeable owing to the approach of a secondary depression. At night lightning was seen in the South of Ireland and from Prawle Point to the North Foreland in the South of England. At 9 a.m. of Tuesday the waning moon and the planet Venus were seen in bright sunshine. A beautiful conjunction of these bodies was well observed on Wednesday morning. Early on Thursday thunderstorms occurred both at Malin Head and at Roche's Point, accompanied by hail showers. On Friday a new

series of deep depressions reached Ireland from the Atlantic, the barometer falling four-fifths of an inch in Dublin. Southerly gales and heavy rain occurred, while temperature rose to 58·8°. Early on Saturday morning a sudden "chill" succeeded this warmth in connection with a V-shaped secondary depression, and rain, hail and sleet fell abundantly, the Dublin and Wicklow Mountains becoming deeply covered with snow. At the same time the thermometer rose above 60° all over the South of England. In Dublin the mean height of the barometer was only 29·318 inches, pressure ranging from 28·490 inches at 9 30 p.m. of Sunday (wind, S.W.), to 29·831 inches at 9 p m. of Thursday (wind, W.S.W.). The corrected mean temperature was 47·1°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 45·6°. On Friday the screened thermometers rose to 58·8°; on Saturday they fell to 34·9°. The prevalent wind was S.W. Rain fell on six days to the amount of 1·366 inches, ·890 inch being registered on Friday.

During the week ended Saturday, the 23rd, the weather remained changeable, dull, open, and rainy, particularly on the east coast of Ireland. Sunday, no doubt, was a fine, even bright day, but the setting in, on Monday, of a decided southerly current of warm, moist air along the western face of a large anticyclone over the Continent brought dull skies and heavy frequent rainfalls to Ireland and the western half of Great Britain. In the east and south-east of England conditions were more favourable and the weather, while dull, was comparatively dry. On Sunday morning the centre of a deep depression was found off the N.W. of Norway, where the barometer was below 28·70 inches—on the other hand, pressure exceeded 30·30 inches over Southern Germany, the S.E. of France and Italy. Strong S.W. and W. gales blew in Scandinavia, but the wind was moderating in the British Islands, with a quickly falling temperature. Early on Monday frost occurred over central England. The area of high pressure meanwhile moved northwards and developed, so that by Thursday the barometer rose above 30·70 inches in Sweden. A low pressure area at the same time arrived off the S.W. of Ireland, causing strong S.E. winds, gloom, and rain in this country. On Friday a complete reversal of these conditions took place—the barometer became high off the West of Ireland, and a complex depression passed southwards across the North Sea. The result was the setting in of northerly winds, with drier and colder weather in Ireland, but with falls of cold rain, sleet and hail in the sister country. In Dublin the mean height of the barometer was 30·026 inches, pressure ranging from 29 665 inches at 9 a.m. of Wednesday (wind, S.E.) to 30·337

inches at 9 p.m. of Saturday (wind, E.N.E.). The mean temperature was 47·5°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 46·4°. On Thursday the screened thermometer rose to 55·6°; on Monday the minimum was 37·0°. Rain fell on five days to the amount of ·671 inch, ·270 inch being measured on Tuesday. The prevailing wind was S.S.E.

Except at the beginning of the week ended Saturday the 30th, when a brisk east wind was blowing, and at its close, when the wind was westerly, the weather was overcast and gloomy. Thursday and Friday were, in addition, very wet, damp days, with extreme thickness of the atmosphere. During the first three days of the period an anticyclone lay upon the North Sea between Scotland and Norway, while extensive areas of low pressure were found both over the extreme North of Europe and in the Mediterranean Basin and over the Peninsula. Strong westerly winds consequently prevailed in the far North, still stronger easterly and north-easterly winds in the South, while the atmosphere was calm in Scotland, and over the South of Scandinavia. Sharp cold prevailed at this time in the N.E. of Scotland—the thermometer falling at Nairn to 23° on Tuesday morning, but the weather was generally open in the British Isles. In Germany severe frost was felt—the minima at Munich being 21°, 22°, 27°, 19°, 19°, 25°, and 30°; at Berlin, 27°, 28°, 25°, 25°, 27°, 19°, and 16°. On the east coast of Ireland temperature was some 4° higher than at Holyhead during the easterly winds of the earlier part of the week. On Thursday, however, temperature became higher very generally, but rain at the same time set in, and a murky sky and extremely damp air lasted until Saturday, when the sky cleared with a bracing W. wind. In Dublin the mean height of the barometer was 29·999 inches, pressure ranging from 30·447 inches at 9 p.m. of Sunday (wind, E.) to 29·600 inches at 9 a.m. of Friday (wind, N.E.). The mean temperature was 46·4°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 45·9°. On Wednesday the screened thermometers fell to 41·7°, on Friday they rose to 50·8°. Rain fell on three days to the amount of ·467 inch, ·270 inch being registered on Thursday. Easterly winds prevailed until Saturday. The range of temperature was small—only 9·1°.

The rainfall in Dublin during the eleven months ending November 30th, amounted to 27·298 inches on 167 days, compared with 15·378 inches on 141 days during the same period in 1887, 25·768 inches on 173 days in 1888, 25·718 inches on 178 days in 1889, 25·706 inches on 189 days in 1890, 24·521 inches on 163 days in 1891, 24·849 inches in 186 days in 1892, 18·011 inches on 155

days in 1893, 27·750 inches on 191 days in 1894, and a twenty-five years' average of 25·292 inches on 177·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in November, 1895, was 5·445 inches distributed over 20 days. Of this quantity 1·140 inches fell on the 15th, ·680 inch on the 5th, and ·655 inch on the 19th. From January 1st, 1895, up to November 30th, rain fell at that station on 151 days, and to the total amount of 31·715 inches. The corresponding figures for 1893 were 19·586 inches on 150 days, and for 1894, 35·716 inches on 168 days.

At Cloneevin, Killiney, Co. Dublin, 4·43 inches of rain fell on 20 days, compared with a ten years' average of 2·066 inches on 15·7 days. The maximal fall in 24 hours was 1·01 inches on the 15th. Since January 1st, 1895, 28·66 inches of rain have fallen at this station on 163 days.

CHANGE OF TYPE IN FEVERS.

Gaillard's Medical Journal quotes the following from "Remarks on the Continued Fevers" of Louisiana, by Professor Rudolph Matas of New Orleans:—1. The true malarial type of fever—the strictly intermittent—is gradually disappearing from the city limits, and is now almost restricted in its prevalence to the swampy portion of our suburbs. 2. That the continued type of fever is gradually gaining the ascendancy, and the true typhoid type is yearly becoming more frequent. 3. That this gradual transition from the intermittent to the plain remittent continued, and finally, to the continued typhoid type of fever, is a phenomenon that has been observed elsewhere, where the original conditions of nature gradually suffered profound alterations from the presence of a progressively increasing human population; that malarial fevers are the products of the unredeemed, uncultivated swampy lands, while the typhoid type is a product of human aggregation which usually follows in the wake of increased means of communication and other conditions inherent especially to metropolitan life. 4. That this transition in our fever type is being effected gradually without any perceptible change in our water supply, milk supply, or food supply, or in our sewerage system or drainage system, and that the only conditions that have changed have been the notable increase in the facilities for communication between this and other large northern and western metropolitan centres where the typhoid type of fever has long predominated and whence it could be readily imported.

PERISCOPE.

THE CYCLE.

At a recent meeting of the Academy of Medicine of Paris, M. Petit brought forward an account of three cases of sudden death from the use of the bicycle. After a prolonged discussion the Academy recommend that before commencing cycling, the individual should: (1) submit to a physical examination; (2) the exercise should be taken moderately; (3) heavy machines should be avoided; (4) those suffering from aortic disease, mitral without compensatory hypertrophy, should be forbidden cycling.—*Repertoire de Pharmacie*, No. 10.

SULPHONAL, UNPLEASANT EFFECTS OF.

Dr. Schœdtler reports the following unpleasant effects from full doses of sulphonal:—Two women to whom it was given suffered from vomiting, diarrhœa, albuminuria, and complained of the taste of sulphur in their mouths. After the vomiting they were attacked with vertigo and palpitation.—*Ther. Mntsh.*

ETHERISATION.

At the meeting of the Surgical Society of Paris, of the 5th of June last, M. Reynier brought forward statistics of 52 cases of death during etherisation, from 1881 to 1894. He also drew attention to the fact that the most pronounced advocates of etherisation consider it unsuitable for operations on the face, strangulated hernia, intestinal obstructions, for those suffering from any pulmonary trouble, and for children and old people.—*L' Union Médicale*, No. 23.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Diabetic Foods.

Messrs. G. Van Abbott & Son, 6 Duke-street Mansions, Grosvenor-square, London, W., have submitted for our inspection samples of their well-known and excellent breads and biscuits for diabetic patients. The "slices" of their gluten bread when lightly toasted are exceedingly palatable and sustaining, particularly when buttered. Their gluten biscottes when similarly prepared are really delicious at breakfast or with afternoon tea. The biscuits

include almond cakes, cocoanut biscuits, gluten and ginger biscuits, and as a novelty soya biscuits. These last-named are prepared from the seeds of the *Soya hispida*, which contain only 6·4 per cent. of starch, 36·7 per cent. of proteid matter, and 17 per cent. of fat. The almond cakes are sweetened with gluside (saccharin). The gluten and ginger biscuits are crisp and carminative. We can confidently recommend Messrs. Abbott's preparations for use not only in diabetes mellitus, but also in various forms of dyspepsia, and even for the table of the healthy.

Caffyn's Raw Beef Products.

The Liquor Carnis Company, 50 Holborn Viaduct, London, E.C., and of the Smithfield Works, London, E.C., have placed in our hands a physician's sample case of Caffyn's raw beef products. Among these are found Virol, Marrol, Caffyn's Liquor Carnis, or "Meat-juice," and Caffyn's "Malto-carnis." Each and all of these preparations, except the last, have been already noticed with approval in our pages.[a] The "malto-carnis" is a clever combination of extract of malt and cocoa with uncooked beef-juice (the "Liquor Carnis"). How the latter is prepared is thus described by *The Chemist and Druggist*:—

"We may, for convenience, divide the factory into three departments: 1, pressing; 2, bottling; and 3, finishing. To the first of these, supplies of the choicest parts of the ox are brought in the morning of every working day, straight from the shambles. It is at once cut into succulent steaks, each of which gets a slight sprinkling of table salt; is then enclosed in a new muslin bag and an outer canvas bag, and, with dozens more, is placed between the perforated metallic plates of an hydraulic press. When the company commenced work they were content with a press which took a charge of about 100 steaks at a time, but they have had to meet a greater consumption than was anticipated, so that lately they have installed an exceedingly powerful press, which would do perfectly for making bales of cotton, and this is tested to give a pressure of 600 tons. When the pile of steaks is put on the receiver, the whole is surrounded with a jacket (iced in the summer), and the pressure applied. We need not follow the process too minutely, it is so simple. The Liquor is the pure juice of beef, and in order that it may keep, the most rigid attention must be given to exclude foreign matter from it."

From this description, it is clear that the nutritive value of both liquor carnis and malto-carnis must be especially high.

[a] See Vol XCV., page 544, and Vol. XCIX., page 447.

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MEDICAL SCIENCE.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VI.—*A Case of Ovariotomy.*[a] By R. J. KINKEAD, M.D., Prof. Queen's College, Galway; Physician and Gynæcologist to the Galway Hospital.

MRS. O'N., aged sixty, the mother of eight children, the youngest of whom is eighteen years of age, was admitted under my care to the Galway Hospital on 25th September, 1895.

I had been brought out some nine miles to her house on 8th April, as "she was bad with the dropsy and needed relief." She was in bed, half dressed, as is the custom of the country, in a small ill-lighted room, containing two wooden bedsteads with high sides, besides a big chest and other furniture; so that examination of the patient was difficult.

She was propped up with pillows; respiration shallow and hurried; pulse rapid; face anxious; abdomen distended and tense, dull on percussion, except in upper portion; fluctuation distinct; per vaginam, no tumours could be felt; Douglas's pouch empty.

The surface of abdomen was smooth; the swelling reached a couple of fingers' breadth above umbilicus. I diagnosticated an ovarian cyst, and strongly urged her removal at once to hospital. Both patient and relatives refused to entertain the idea, and I did not see her again until 26th September, the day after her admission to hospital.

[a] Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, December 20, 1895.

Her abdomen had increased in size, and now was enormously distended. She could not lie down. Her pulse was rapid and weak, though regular; breathing very shallow and hurried; face pinched and haggard—she had lost flesh, though not emaciated; fluctuation distinct all over the abdomen, the surface of which was smooth and tense, with large veins ramifying over it; towards left inguinal fossa nodular masses were felt.

The entire of the anterior surface of the abdomen was dull on percussion, except close under margin of ribs; the dulness did not vary its position on change of posture; the right flank was also dull, but a resonant note could be obtained on left flank, and back towards lumbar region, when patient was on right side; heart and respiratory sounds were normal; and, although scanty, the urine was free from albumen and sugar.

Assisted by my colleague, Professor Brereton, and by Dr. M. Lydon, house surgeon, who administered the anæsthetic, I operated on 13th October.

A purgative had been administered on the 11th, followed by an enema on morning of 12th, on which day the abdomen was well washed with soft soap and hot water.

On the morning of the operation the pubes were shaved, and the entire abdomen and thighs were washed. Immediately after the washing two or three folds of lint, soaked in a warm solution of carbolic acid, 1 in 40, were laid over the abdomen.

Chloroform was used at first, and when the patient came fully under its effects ether was substituted, and anæsthesia maintained by it to the end of the operation.

A catheter having been passed and a couple of ounces of urine drawn off, I removed the carbolised lint and opened the abdomen in the mesial line, bringing tumour into view, its surface glistening and of a green colour.

Adhesions had formed extensively between the cyst's surface and the abdominal wall, which, however, were easily broken down. Above, the omentum was firmly adherent; and from the top of the tumour, and towards the left, a strong band of adhesion, some two inches wide and three long, could be felt passing upwards to the parietes.

Having tapped the cyst with a Spencer Wells' trochar, and partially emptied it, I was obliged to extend the incision, originally seven inches long, by at least two inches, in order to reach and deal with these adhesions. It was impossible to separate them from the tumour: the omental one was double ligatured, and cut off between the ligatures; that from the abdominal wall, having

been carefully examined, and found free from visible vessels, was cut off close to the cyst: there was no bleeding from the cut ends. Fortunately, there were no adhesions to the intestines or pelvis; and, on being emptied, the cyst, with a solid base, the size of a dinner plate, composed of numerous smaller cysts, was easily drawn out through the wound.

The appearance of the pedicle, uterus, and vagina was at first puzzling; the greater portion of the tumour was green in colour, but towards the pedicle it became pink, and the colour of its lower portion was identical with that of the uterus and vagina: the pedicle was twisted and very short, so that it did not at first sight appear to be a pedicle, but looked as if the tumour was merely constricted; that the uterus, projecting sideways through the lower angle of the wound, was a portion of it, swelling out below the constriction; and that the vagina was the pedicle—a twist in the vagina making the appearance more real.

The tumour had to be twice turned completely round, from right to left, to untwist the pedicle: it was fleshy and very short, not more than $\frac{1}{4}$ inch, so that the tumour appeared to spring directly from the left uterine corner. So short was the pedicle that, after transfixing and tying it as close as possible to the uterus, I was obliged to dissect a portion off the outer surface of the tumour to form a stump to prevent the ligature slipping. The hæmorrhage was trifling, very little blood escaped into the abdominal cavity.

The abdominal wound was closed by interrupted sutures of silkworm gut, passed from within outwards through entire thickness of the walls, and placed half an inch apart: the wound was dusted with iodoform and boracic acid, 1 to 7, and dressed with gauze and boracic wool.

From commencement of incision until the patient was placed in bed occupied exactly an hour.

She bore the operation well, and there was no vomiting either during or after it. For first twelve hours she got only teaspoonfuls of hot water at frequent intervals; during the night half a pint o beef-tea, and the next day milk and beef-tea alternately.

The catheter was used every six hours for two days, and bowels were moved by enema on fourth; half the sutures were removed on seventh day, and the other half on the eighth.

There was very slight tympanitic distension of the abdomen, no vomiting all through; but trouble was caused by the tendency to formation of fæculent masses in the intestines, which could be felt in ascending, transverse, and descending, colon, necessitating the administration of aperients in addition to enemata.

The wound healed by the first intention. The patient sat up in bed on the tenth, and was allowed up on the eighteenth day, after which the bowels operated regularly.

Sixteen quarts of a dark brown fluid were drawn off by the trochar.

I annex a report on the tumour, with photographs kindly supplied me by Dr. R. Allen, M.B., and Travelling Scholar, R.U.I.:—

"The tumour is a unilocular cyst, and was attached by means of a pedicle which is in connection with the remains of the ovary. The pedicle was made up of the left Fallopian tube, the ovarian ligament, and a portion of the broad ligament.

"The cyst contained 640 ozs. of fluid. This fluid was of a watery consistency and dark brown colour. There was also found in it a large amount of dark blood clot and a thick viscid mucoid substance. From the inner wall several smaller cysts spring, three of which are larger than a hen's egg, the largest being multilocular, somewhat cubical in shape, and with sides measuring 5 inches. These cysts contain a thick, glairy fluid, dark green in colour, with which they were tensely distended. Their walls are thin and translucent, and in the unopened state they presented a dark green shining appearance, due to the character of their contents.

"The tumour weighs when empty 56 ozs.

"The cyst wall is thickest towards its posterior portion. On the anterior surface the remains of omental and peritoneal adhesions are evident; and in the substance of the wall in this region are a number of blood extravasations. Large blood-vessels, arteries, and veins are found, running from its pedicular attachment, and ramifying over its surface. On the inner surface the whole of the anterior portion of the cyst wall was covered with a firmly adherent layer of dark brown blood clot. A large amount of discoloured blood clot was also adherent to the surface of the largest daughter cyst.

"The Fallopian tube is not dilated or elongated, but the ostium and canal are open: the walls are thickened, the thickening being most marked towards the fimbriated extremity. A trace of the ovary can be detected: it is spread out and shrivelled, and on its surface there is a small translucent cyst $\frac{1}{2}$ inch in diameter.

"*Microscopical characters*:—The wall consists of fibrous tissue: in some parts it can be split up into three or more layers. Flattened and elongated connective tissue cells are found in small

numbers, having the usual distribution between the fibres. It is covered externally with flattened nucleated cells. Internally, cells are found lining it in some parts: a few of these present columnar characteristics, and the majority are of a regular flattened variety: however, the greater portion of the internal surface is devoid of cellular elements. The structural elements to be detected in the fluid are round granular cells. The most of these are non-nucleated; but in several a distinct nucleus is present. Columnar nucleated cells are present in small numbers, and a large amount of small granules. The small cysts possess a somewhat similar structure: their walls are fibrous, and lining their inner surfaces is a layer of cubical cells. The viscid fluid contained in these exhibits similar structural elements. On examination of the remains of the ovary, Graafian follicles are recognised; and the small cyst above mentioned as connected with this part contains a well-marked membrana granulosa lining its interior: no ovum, however, can be detected. This cyst is of interest, showing clearly a stage in the cyst formation, and giving an indication as to the origin of the large tumour, which may be described as a unilocular oöphoritic cyst."

ART. VII.—*Two Cases in which Uncommon Symptoms were present in Cases of Throat Disease.*[a] By JOHN BURGESS, F.R.C.S.I.

BEFORE entering on the subject of this paper I shall premise what I am about to read by stating that the cases to be described are not in themselves rare forms of disease, but merely uncommon developments in the course of very ordinary conditions.

I shall try to find excuse in the absence of novelty—firstly, by monopolising your time for a very few minutes, and secondly, by appealing to your indulgence as a scientific Society to consider with me that peculiar form of what may be termed every-day diseases, which are infinitely more instructive in a practical sense than those highly exceptional cases which but a few of us may treat in a lifetime.

The first case is one of acute phlegmonous pharyngitis complicated by an highly unusual symptom.

[a] Read before the Medical Section of the Royal Academy of Medicine in Ireland, December 13, 1895.

Case I.—Mrs. D., aged forty, tradesman's wife, stout, rather anæmic, awoke with a sore throat and dysphagia on the 2nd Aug., having been previously in good health. This continued until the 4th Aug., when a great gush of blood and clots came from her mouth *without any vomiting.*

I did not see her until the following morning (5th), when her throat presented the signs of a more than ordinary severe right tonsillitis, the redness extending widely from the inflamed tonsil over the soft palate. In front, corresponding to the outside of the anterior pillar of the fauces, the palate was bulged forwards, with a sense of fluctuation, beneath. On the inner surface of the tonsil there was a vertical sulcus, the remains of former disease, but there was no appearance of any bleeding point.

I opened the abscess in the ordinary way, giving exit to a quantity of sanious pus similar to what is seen in acute abscesses elsewhere. There was the usual immediate relief, and I hoped the trouble was at an end.

About six hours afterwards I was called to see her again in consequence of a second hæmorrhage—from half to a pint of fluid blood and clots—which suddenly filled her mouth. She stated she had to put her fingers in to pull forth the latter, while the fluid blood poured through her lips on to the bedclothes. By the time I saw her there was no bleeding, some thin pus was passing through the opening I had made. Corresponding to the inner border of the tonsil, where the sulcus was situated, there was an adherent clot, which extended further down the pharynx than I could see at the time. There was no history of epistaxis, nor were there signs of blood trickling along the back of the pharynx.

On the following morning, 6th August, when I visited her I found there had been no repetition of the hæmorrhage, and the hyperæmia had almost disappeared. I continued the treatment adopted—of drachm doses liq. ergot, ice to suck, and a spoonful of iced milk occasionally.

At 6 p.m. she had a third hæmorrhage corresponding in quantity (10–20 oz.) to the previous one twenty-four hours before.

When I next saw her, at 9 p.m., there was nothing to indicate bleeding, except the clot in the situation previously alluded to, which could be seen by the mirror of a laryngoscope along the right tonsil. The upper part of the pharynx was empty, and on getting her to rinse out her mouth well with cold water it came back uncoloured. The incision was exuding thin pus. On pressure applied within the mouth, and outside at the angle of the jaw, I could get no blood to proceed from the opening.

As the bleeding, for the time being at least, had ceased, I thought it wise to apply no styptics to the tonsil, but substituted $\frac{1}{100}$ gr. ergotinin hypodermically, applied ice to the neck, and fed her by nutrient enemata, forbidding anything to be taken by the mouth. Notwithstanding all these precautions another attack of hæmorrhage occurred at 1 a.m. about similar in quantity; again at 6 a.m., and at 10 a.m.—in all three, during the night and early morning. The last she thought due to washing out her mouth with cold water. I found her very collapsed with a thready pulse—140; but seeing as yet no actual indication for extreme measures, I continued the treatment by the ergotinin hypodermically, with nutrient enemata every two hours, and the external application of ice.

She was seen that evening by Dr. Richard Hayes, who most kindly gave me his valuable assistance. As there had been no fresh bleeding, we agreed that it was best to continue the same treatment, and give a double quantity—$\frac{1}{50}$ gr. ergotinin—at 10 p.m. Subsequent to this there was no further trouble. The patient was fed by nutrient enemata for three days by myself and a nurse from St. Patrick's Home, whose extreme attention I cannot find words to praise sufficiently, and she speedily made a perfect recovery.

The interest in this case is the source of the hæmorrhage. It occurred first at midnight, 4th August, twelve hours before my opening the abscess. There had been no escape of pus anywhere, except from this incision, from which it was not possible at any time afterwards to express blood, nor was any clot seen in its vicinity.

No history of hæmorrhagic diathesis could be elicited. She had never suffered from epistaxis, nor were the gums inclined to bleed on pressure. On each occasion of the recurrence of the bleeding she was positive in her assertion that she suddenly felt her mouth full of fluid blood and clots without vomiting. With the laryngoscope I could find no more trace of bleeding than a long, thin clot attached to a sulcus of apparently old-standing disease of the tonsil. The pharynx was empty and no blood passed with the stools.

The symptoms pointed to the only possible conclusion of a leakage from a vessel of considerable size which got sealed up by a small clot, and through some movement, most likely of swallowing, this got dislodged, resulting in further bleeding.

It is easy to conceive that in fits of either coughing or vomiting a vessel in an inflamed throat may give way, but in this case there was neither the one nor the other, and the spontaneous rupture of an artery in cases of this kind seems so much out of the common that in the literature on this subject I find no similar record.

A very practical point occurs. What caused the final arrest of the hæmorrhage? There were in all six attacks of from a half to a pint, of which four followed the subsidence of the inflammation. It was due, in my opinion, to a weakened cardiac systole from loss of blood, aided by the reflex contraction caused by the external application of cold. The tabloids of ergotinin were worthless.

A short time since, when reading an old book of lectures delivered at Steevens' Hospital by Sir Henry Marsh, I was reminded of a case which came under my observation, which will, I trust, prove interesting as an example of a rare complication of one of the exanthemata, and from the fact that the patient, who afterwards passed with distinction through his medical course at the Meath and Molesworth-street Hospitals, is well known to several of the Section.

Case II.—Some years ago, when living in the country, I was sent for to see a young gentleman, aged nineteen, who had suffered from what was described as a fainting fit on the previous evening after returning from a day's grouse-shooting. He was a thin muscular boy, with every appearance of health, and rather scouted the idea of being unwell. On inquiry, however, I found out that on the previous day after coming home he fainted, his face becoming dusky, and he appeared to be suffocating.

The alarming symptoms being only transitory, his people did not think it necessary to obtain medical advice, especially as their doctor was unwell. On the following morning, however, thinking it better to err on the side of caution, and their usual medical attendant being unable to come, they sent for me. The boy was up in his room, and rather indignant at any interference with his liberty. He told me he had a cold with a dry cough, which gave him no trouble, and being rather tired on the day before he felt a weakness come on when he got home.

There was no history of epilepsy. His temperature was 99°, pulse not much accelerated—the increased rhythm being principally due, I thought, to the annoyance caused by the intrusion of

a stranger against his wish. The inspiratory murmur was very slightly increased over the bronchi; there was no redness of the fauces. Otherwise than the cough there was no symptom of anything more than a very mild catarrh. I advised him to stay in his room, keep a fire there as the evenings were cool until he expectorated with freedom, not to speak much, and prescribed a sedative mixture.

The next morning his condition was unchanged. The cough, which was slight, continued still without expectoration. He had slight hoarseness, but otherwise no discomfort. About three hours after my visit I was suddenly called to see him by a messenger stating he had become very much worse, and on my arrival I was met by his mother with the alarming intelligence, "You are too late; my son is dead." I did not think of inquiring about particulars then, but hurrying up to his room found him lying on the floor, apparently asphyxicated. I could detect no attempt at breathing, but hoping against hope, with the aid of Dr. Penny, at present in New South Wales, his tongue was pulled well forward and artificial respiration tried. At the end of a half hour, seeing some attempt at breathing, we unfortunately tried to pour some undiluted brandy down his throat. It is possible some of it got into the larynx, for a violent spasm came on, his face became cyanotic, the inspiratory efforts sounded like steam escaping at high pressure through a small pipe, and suddenly ceased. We recommenced the artificial respiration, as we believed it alone gave a chance, with all the aids we could command—warmth to the axillæ, inside thighs and feet, hypodermics of ether and friction—without any signs of improvement in our patient.

At length after six hours, as we were about to abandon hope, I noted the dusky hue in his face less marked, and continuing I was both surprised and overjoyed to see his eyes regard me, and hear him in a faint whisper ask for a drink of water. I remained in the house, sleeping in his room that night and the following, and on the third morning found him covered by the rash of measles.

I suspected the possibility of this from the first, both because there was an epidemic in the vicinity and that I seen a somewhat similar case while acting as Resident Surgeon at the Richmond Hospital in the year 1880, despite his mother's assurance that having had measles when a child he was not likely to get it again.

After this, with the exception of an attack of general urticaria, during which his temperature run up to 102° for a few days, he made an uninterrupted recovery, and strange to say, when years

afterwards he was Resident in the Meath Hospital, he incurred a third attack, and was treated by Dr. John W. Moore, without, however, the alarming symptoms which preceded the second onset. I should have said he was seen by Dr. Brew, of Bray, after the spasm had passed off, who was kind enough to say that the work of saving the boy's life was over before he arrived.

This case brings under your notice a morbid condition which seems strangely overlooked in modern times—as to its fatality, being generally confounded with the choking symptoms occurring in the course of acute laryngitis due to œdema.

Steffen in von Ziemssen's work states that catarrhs of the larynx, trachea or bronchi are not of themselves capable of producing laryngeal spasms by reflex irritation, but when the cramp, as in this case, has previously existed, they are capable of exciting it although it be disappearing, especially through paroxysms of coughing.

Laryngeal spasm is, according to all authorities, very uncommon after the first three years of life, and then almost confined to the female sex. That it is a frequent cause of death is evident from the figures given by different authorities:—

Barthez and Rilliet	-	8 deaths in	9 cases.
Hérrard	-	6 „	7 „
Reid -	-	115 „	289 „
Lorent	-	77 „	200 „
Salathé	-	2 „	24 „

In spite of this we find this condition alluded to in most text-books in a short article on laryngismus stridulus, having a usually favourable termination. The above recalls Marsh's "Published Cases," where at least if laryngitis existed, which he denied, a sudden spasm often terminates fatally what has been looked on as a trivial ailment. Here, as well as I could judge, the spasm was primary. Whatever catarrhal symptoms were present resembled more the irritable condition of the larynx described in Cohen's book than any inflammatory change. As to the spasms in some cases being due, either, as Cohen points out, to incarceration of the free edge of the epiglottis by the aryteno-epiglottidean folds taking

part in the cramp, or the partial swallowing of the tongue described by Hemming, I think this case can belong to neither, for the reason that the tongue was pulled well forwards simultaneously with the artificial respiration.

What caused the spasm I cannot say, except one can suppose that the latent zymotic disease, in the absence of its usual prodroma of naso-laryngeal catarrh was capable of exerting such an influence on the basal ganglia. No doubt tracheotomy may appear to have been indicated; yet from the condition of the patient—our uncertainty whether he was alive part of the time—made me nervous to risk any further shock. And I claim, perhaps in my ignorance, I gained by an equally good method and probably good luck combined, my object in saving the life of one who is now a member of our profession in large practice in England.

ART. VIII.—*The Myotatic Irritability of the Pectoral Muscles as an Early Sign of Acute Croupous Pneumonia.* By RICHARD H. KENNAN, M.B., Travelling Prizeman (Dub. Univ.); Late Resident Physician, Birmingham Infirmary; Late House Surgeon, Sir P. Dun's Hospital.

IT is with the greatest diffidence I submit the following few notes and observations, fully conscious as I am of their incompleteness and insufficiency to establish the value of what may or may not prove to be an early diagnostic sign of pneumonia.

It is in the hope that the truth may be more rapidly arrived at by the assistance of others who have greater opportunities and abilities for observation, that the following crude material, without elaboration or augmentation, is now put forward. I shall first briefly recite the cases dealing with the subject.

CASE I.—T. B., aged eighteen years, was admitted to the Birmingham Infirmary on 5th September, 1895, with well marked symptoms and signs of pneumonia in the right upper lobe. The myotatic irritability of the right pectorales was very well-marked, while those on the left side could not be made respond to mediate percussion.

This struck me at the time as remarkable, but it was not till the second case came under my notice that my attention was concentrated on the sign, if such it should prove to be.

Case II.—F. B., aged nineteen, was first seen by me in the probationary wards of the Infirmary on the 22nd of October, 1895. In the preliminary examination there his case was judged sufficiently obscure to warrant his being sent to the isolation block; seen and more carefully examined a few hours afterwards, the following notes were made:—Illness commenced on the previous Saturday—*i.e.*, four days before—with vomiting; this was persistent, scarcely any food being retained. He had had slight shiverings for the first two days; constipation, very slight cough, no sweating, no expectoration, no pain anywhere; a bad taste in the mouth was compained of, a "stuffed up feeling" in his head, and "a soreness all over." He had a fairly recent sore on his right heel, which was in a healthy condition. A herpetic eruption was present under each nostril, which came out on the day of admission. His tongue was furred, white and moist. The first sound of his heart was murmurish at the apex, and not markedly prolonged; the apex beat was in the normal position. There was no friction sound; temperature, 103·8° F.; pulse, 112; respirations, 38 per minute. The only sign discovered in the chest was an occasional fine crepitation at the end of inspiration heard at the right base, and this was not present a few hours afterwards, when the patient was seen by Professor Kauffman, Visiting Physician to the Infirmary. The myotatic irritability of the right pectorales was, however, fairly well marked, while that of the left muscles could not be elicited.

Professor Kauffmann thought, after careful examination, that it would be impossible at that time to definitely diagnosticate pneumonia.

The following morning, however, the following note was made:—Impaired resonance over right base; vocal fremitus increased; small area of bronchial breathing below angle of right scapula; cough short, hacking. In the evening bronchial breathing was well marked over the right base, and the dulness was more pronounced.

The following morning all the usual signs of acute pneumonia were present, including pain in the side, and "rusty" expectoration. A pseudo crisis took place in the evening, a true crisis occurring thirty-six hours afterwards. In this case, where the usual signs were delayed so long, and the early diagnosis was thus rendered uncertain, the presence of the right pectoral myotatic irritability would have been of the greatest assistance, had we known what reliance could be placed on it.

The next case I examined in this connection was a somewhat doubtful one, so far as early diagnosis was concerned, I was permitted to see it through the kindness of Dr. Beazeley.

Case III.—P. M., aged thirty-two, was admitted on the 5th of December, 1895. He had been taken ill on November 29th with shivering, pain in back and left side of chest, and vomiting. His cough was very troublesome. He said he had been much better since the sixth day of his illness. The following signs were present in his chest:—At the left base percussion note was diminished, breath sounds loudly tubular, vocal fremitus and resonance much increased. Bronchophony marked; temperature, 100·4°; pulse, 88; respirations, 36; sputum was frothy and rusty.

Before looking at these notes which had already been made on the case, I examined his pectoral muscles, and found the muscular irritability very markedly present on *both* sides. I came to the conclusion that I could not say from it therefore which side the pneumonia was. On looking at the notes I found the signs were all left-sided. About ten days afterwards I was informed that the further course of the case showed it to be one of tuberculosis, and not of acute pneumonia, which it had at first seemed to be.

The myotatic irritability of muscles in phthisis is, of course, familiar to all, and in this case satisfactorily accounted for its being bilateral.

Case IV.—The next case is that of T. G., aged twenty-seven years, who was admitted on the 16th December. He had been taken ill two days before with shivering and vomiting, cough, dyspnœa, and pain in the left side of chest. He had previously been in good health. There was deficiency in the percussion note, and whiffing breath sounds at the left base, with fine crepitations. The vocal fremitus was increased.

I examined his pectorales before learning more than that pneumonia was suspected, and found the muscular irritability present but badly marked in the left pectorales, and absent in the right, on which account I suspected the pneumonia was left-sided, and found that all the usual signs pointed to the same conclusion.

On considering the subject it would seem to me no more remarkable that the muscles of respiration, ordinary and

extraordinary, should sympathise with the condition of the lungs than that the muscles which move a joint should be brought, through the medium of the nervous system, to sympathise with the condition of that joint. Let it be noticed that it is principally in acute joint affections, or in the very early stage of chronic ones, that this sympathy is most shown. That the abdominal muscles are reflexly influenced by the condition of the viscera underlying has been equally established. *A priori*, one would expect that the muscles being in a condition of, let us say, *qui vive*, their muscular irritability would be increased.

Many authorities agree that the most constant early sign of pneumonia is the fine inspiratory crepitation, while it is generally conceded that it must be most carefully considered by the light of accompanying symptoms. Another equally early sign would thus be of immense value to assist in the diagnosis. Observation should be extended to the other great thoracic muscles. So far as the pectorals are considered, they do not appear to assist beyond suggesting the *side* on which pneumonia is present.

One word as to the method used to elicit the presence of the myotatic irritability. A finger of the left hand was placed in the direction of the course of the fibres of the pectoralis major, and then sharply percussed by the middle finger of the right hand, when a rapid contraction immediately succeeding was felt in the muscle under the finger of the left hand.

I have made no reference to authorities in the foregoing brief sketch, as in my necessarily limited reference to the literature of pneumonia I have not been able to find any hint on the subject here dealt with.

I have to thank Professor Carter, Professor Kauffmann, and Dr. T. Sydney Short, Visiting Physicians to the Infirmary, for their kindness in allowing me to make use of the notes on these cases; and I am indebted to Drs. Smyth and Beazeley, my *confrères*, for affording me the opportunity of seeing Cases III. and IV.

ART. IX.—*The Domestic Treatment of the Insane.*[a] By CONOLLY NORMAN, F.R.C.P.I.; President (1894–5) of the Medico-psychological Association of Great Britain and Ireland; Resident Medical Superintendent, Richmond (Dublin District) Asylum.

THE treatment of the insane is a particularly suitable subject for discussion in this Section, inasmuch as it deals with questions not only of medical interest but of great interest to the jurist, and indeed, from a fiscal point of view, of profound interest to all the public.

When I last addressed the Section of State Medicine, my remarks were concerned with this topic. I then drew attention to some of the disadvantages resulting from the treatment of the insane in asylums. These are not very likely to be exaggerated by one who has been twenty years an asylum officer, and who cannot pretend to have entirely raised himself above the influence of the *Idola Specûs*. They are, however, considerable. In the huge asylums which have sprung up or are now springing up everywhere, individual treatment—the one thing likely to benefit our patients—becomes almost impossible. Besides, all patients do not require the discipline of an asylum, and where not needed this discipline and the routine of an institution are, to put it in the mildest way, trying. In my opinion, they are distinctly injurious as well. Here, as in so many other ætiological questions, it is not always easy to separate cause and effect. I have heard it maintained by a distinguished alienist that the cause why chronic epileptics are demented is that they have been poisoned by bromide of potassium. This is an exaggeration, and indeed, in the majority of cases, demonstrably untrue. Neither would it be correct to say that most of the dements in our asylums have become hopeless mental wrecks through the baleful influence of asylum life. But just as there is an element of truth in one assertion, so there is a measure, and I think a larger measure, of

[a] Read before the Section of State Medicine of the Royal Academy of Medicine in Ireland, February 1, 1895. [For the discussion on this paper see Vol. XCIX., page 496.]

truth in the other. The inertia, the indolence, the self-absorption, the lack of all human interest in life which are the characteristics of dementia, are most distinctly fostered by the unhealthy surroundings of asylum society. I have no doubt whatever that many curable cases, when the acute stage is over, are immensely benefited by a change of surroundings. The danger just then is that of allowing the patient to yield to the apathetic tendency which often exists after the defervescence of acute symptoms. This is often best met by restoring him to a life in which he can take an interest. There is a great danger lest, in the dull atmosphere of an asylum, he may grow more and more indolent and timid. He readily falls into a monotonous groove, from which he becomes too apathetic to strive to emerge. Meanwhile, the period during which cure is probable passes away, and our patient figures as a chronic dement. Even for the chronic dement, even for the patient for whom there is no cure, who comes to us, perhaps, without any prospect of recovery, the asylum in many cases has disadvantages, which, in order to counterbalance them, require some such considerations as those arising from some absolute need of the special supervision only to be obtained in an asylum. It is in nowise to be held that all incurable cases of insanity, or all chronic cases, or all cases even of chronic and hopeless dementia, are fit to be at large, and should not be retained in asylums. But a large number do not require the special treatment of an asylum, and could very well be dealt with outside if some provision could be made by which they would be certain to receive that amount of care which anyone not in the full possession of his intellectual faculties must necessarily require.

There is another point, less interesting to us as physicians, but yet of great importance in dealing with all charities supported by the State—namely, the question of expense. Says Ch. Féré :—"The luxuriousness of asylums has reached such a pitch in certain countries that we feel inclined to ask whether philanthropists, who are responsible for their inauguration (at the public expense, be it observed), have not been contemplating the eventuality of

their own individual seclusion in these institutions rather than looking to the comfort of the poor devils who can understand none of this splendour."

It will be readily understood that M. Féré has not seen our Irish asylums, and that the reproach he hints at is not applicable to the "philanthropists" of this country. Nevertheless, in the midst of the luxury provided elsewhere, one does not find that the complaints of loss of liberty are much fewer than they are in our own penuriously-managed institutions. "Let me out; I am wrongfully detained in an asylum," is the universal cry everywhere. Now, I am one of those who hold that you can hardly do too much for the lunatic who is confined in an asylum. The misery of his lot is so extreme that humanity demands that the public, in whose interest largely he is incarcerated, should do all that is possible to relieve him. I think that a good deal of the luxury which excites M. Féré's merriment is exaggerated. It is true that there are in every well-managed asylum many luxuries which are not to be found in the homes of the poor, but it is impossible to make a huge institution like the home of anybody under the rank of an English duke or one of the better-class foreign kings in exile. Therefore it is useless to aim at home-like effects. An institution remains an institution, and the efforts to make its vast precincts bright and comfortable, wholesome physically and wholesome mentally, must always be expensive. And here arises the fiscal question—"Can any habitation be provided for certain classes of the insane much less expensive than an asylum, and offering, as a compensation for its cheapness, a larger amount of liberty?"

This is the state of the problem. To talk of freedom, as if in an absolute sense, is to go too far. Whatever the enthusiasts for colonisation may say, a boarding-house is not like one's home to anyone save the proprietor, but there is a much closer approximation to liberty and to a natural domestic life in compulsory boarding with a family in one's own grade in society than in the freest existence in an asylum.

How far, then, is the treatment of the insane who are under public care possible in private dwellings? A ready

answer will occur to most of my hearers in a reference to Gheel, with the history of which everyone is more or less familiar. But Gheel has been before the public so long that people have grown tired of hearing of it, and a reference to it is commonly met somewhat thus:—"While we must give to Gheel the credit of having maintained for many centuries the traditional practice of treating the insane with an amount of freedom from incarceration unknown anywhere else in the world, and thereby done a great and instructive work, it would certainly seem that the Gheel system is not applicable elsewhere. . . . The very origin of Gheel marks it as a place apart. It had its foundation in the primitive piety of early ages. For at least seven hundred years (the Church of St. Dymphna dates from the 12th century) pilgrimages have been made to Gheel, and the place has been a home for the afflicted. Generation after generation of the people has grown up to the care of lunatics. The management of the insane has become, so to speak, an hereditary tact with them. This could no more be exported than the other traditions of Gheel."

These words are an extract from a paper which I read here five years ago, on the boarding out of pauper lunatics. I can comfort myself that I am not alone in having given utterance to this absurdity. The same opinion has been expressed a thousand times by others both at home and abroad. A few years ago (1889) the whole subject was discussed by the Société Médico-Psychologique de Paris, and the conclusion arrived at was identical with the above. A Commission of the French Senate more recently advised to the same effect.

Nevertheless, Gheel has been imitated, and imitated with success. It is, therefore, no longer possible to allow this lion to stand in the path. It is probably true that conscious and deliberate imitation of ancient institutions is not as sure a foundation as the primitive custom, out of which the ancient institutions sprung, but the conditions of modern life rarely admit of these slow developments. Be this as it may, *solvitur ambulando*, while theorists were discussing the inimitable Gheel, Gheel has ceased to be

inimitable, and it turns out that the only great difficulty in imitating Gheel was the common difficulty that exists in every such enterprise—namely, the difficulty of getting people to try.

I have already attempted a description of the methods of Gheel in my former communication above referred to. For that and other reasons it would be superfluous now to dwell on the Gheel system. The interesting point at present is the success of the modern reproduction of Gheel, which is patent and invites imitation.

Gheel is situated in Flemish Belgium, and among the peasantry of Gheel, who serve as hosts to the lunatics, the Flemish tongue still prevails. This was found very objectionable when patients from the Walloon provinces were sent there. Patients and hosts who spoke different languages could not establish those domestic relations on which the success of the colony depends. Accordingly it was determined to establish, on the lines of Gheel, a colony in the Walloon country. A district in the Belgian Ardennes, in the province of Liège, called from its principal village Lierneux, was selected. The village of Lierneux lies about thirty kilometres south of Spa, and about ten kilometres from Vielsam. There are in the district seventeen other villages, some of which attain the dignity of parishes, having churches of their own and soforth. The whole territory is about equal to that of Gheel in size, but is thinly populated, containing about 2,500 inhabitants. It was designed to plant lunatics to the number eventually of some 1,000 in the houses of the people, after the method of Gheel. Lierneux was selected because it was remote, because it was not traversed by railways or intersected by canals, and because it was supposed that the inhabitants, being poor and without any special industry and supporting themselves chiefly by agriculture, would be glad to accept lunatics as boarders. So they proved eventually, but they made loud protestations when the insane were first sent among them.

In April, 1884, two men and two women were sent from Gheel to Lierneux. They were working patients of the quietest class. The last report which I have been able to

obtain brings us only to the end of 1892, at which date the colony contained 349 patients. Of this number 208 were men, and 141 women. Four men and two women were paying patients, the rest were supported by the public. Thirty-eight were counted as curable, and the remaining 311 as incurable. All classes of the insane are admissible to Lierneux, except the suicidal, homicidal, incendiaries, those who are apt to offend against public decency, and those in whom it is necessary to employ continuous mechanical restraint. The last is a class which practically we do not find to exist in this country, but I suppose it will be understood what is meant.

The patients live in the houses of the hosts, mixing freely with them in domestic life, and in the case of the public patients following as far as they are able the trade or calling of the hosts or assisting them in the ordinary labour of the household. For the public patient the State pays 90 centimes per diem to the host in the case of patients who follow a trade, or who work on the farms; 1 franc per diem in the case of those who do not work. The workers, at the date above named, included tailors and needle-workers, shoemakers, carpenters, masons, whetstone makers, blacksmiths, &c., as well as agricultural labourers. The women are chiefly employed at household work and in attendance on the children of their hosts.

The reception of lunatics has become popular among the sane population. Early prejudices were soon overcome, and from the first year the number of applications for patients far exceeded the number of patients ever at the disposal of the authorities. The fact that the admissions steadily increased from 26 in 1884, to 133 in 1892, tells the same story. The administration of the colony is most careful in its selection of hosts, and most painstaking in the supervision bestowed upon the patients, their food, their dwelling places, their cleanliness, and the general salubrity of their surroundings.

During the period of its struggle, Lierneux, among other difficulties, had to contend with the circumstance that there was no proper central hospital, a dilapidated dwellinghouse in the chief village serving as a substitute. There is now

a well-fitted infirmary. In spite of this and many other disadvantages and discouragements which befell the young colony, the results have been amazingly good, especially when one considers what Dr. Deperon points out in his Report, that the patients sent to Lierneux from the closed asylums have been of the worst classes, "mostly unhappy beings reduced to a merely vegetative life, idiots on the lowest round of the ladder, paralytics in the last stage and the like: patients whom up to the present we have felt bound to admit in our wish to people our young colony."

Writing a couple of years ago, Dr. Féré said truly that Lierneux might be definitely looked upon as a success, and that it appears to demonstrate that it does not need centuries to make a Gheel. He drily adds—"In order to make the experiment succeed, it perhaps only needs to find a man whose interest coincides with that of the public, and who may be induced to tackle the subject as if it were his own business."

The example of Lierneux, or perhaps the influence of Dr. Féré, who has steadily pressed this subject, has induced the French to make a remarkable attempt at inaugurating the domestic care of the insane in the colonial form. It has necessarily been restricted to senile dements, as the French law, up to the present, has forbidden the settlement of lunatics under public care in any places except asylums. Senile dements are held somehow not to come under this rubric. Accordingly, Government, on the motion of the Council General of the Seine, has established a colony for senile dements, at the country town of Dun-sur-Auron or Dun-le-Roi, not far from Bourges, in Berry. It seems to be a quiet little town, that has, like many we are so familiar with, seen better days. Its declining population amounts to 4,200. Its iron mines are closed; the phylloxéra has destroyed its vineyards; there is no special industry, and farming has not been highly developed. Thus it appeared a suitable place, from the economic point of view, while its inhabitants are better fitted than mere peasants to serve as hosts for patients from Paris and its suburbs.

The colony was originally intended for 100 patients, but the number has been recently fixed at 200, and will, there

is little doubt, be largely increased. During the first year and a half of its existence (that is, up to August, 1894) 143 patients were received. Of these 13 were sent back to asylums, 6 died, and 1 escaped, leaving at the end of the period in question 123 patients in residence. The capitation cost per diem was 1 franc 94 c., and when the number rose to 200 it was calculated that this would sink to 1 franc 55 c. The capitation cost in the asylums of the department of the Seine varied from 2 francs 90 c. at Sainte Anne, to 2 francs 10 c. at Salpêtrière. Thus a considerable saving could be effected in the maintenance of any large number of patients. There is an infirmary with 20 beds for new comers, for the sick, and for those who prove unsuitable for the colony, till such time as they can be removed to one of the asylums. In the infirmary the physician lives. He visits each of the boarders at the home of the host once a week. The poor old men and women seem to be generally very happy and contented. Few of them express any desire to return to the asylums; they appear to be well cared for; no accident, no scandal has occurred; they do little work, being generally physically unfit for much exertion. It has been justly said of this particular colony that it is a colony not of work but of rest.[a]

The Scotch boarding-out method of dealing with harmless lunatics differs from that of Gheel, Lierneux, and Dun-le-Roi, inasmuch as there is no distinct colony, and patients are settled wherever it happens to be convenient to place them. I have gone pretty full into the merits of the Scotch system on a former occasion, and therefore I shall not dwell upon it now, the more especially as I believe the somewhat similar system started recently in Berlin has several points of superiority. Besides, the Scotch system is a very old system, though only thoroughly and well worked up of recent years; the Berlin system is entirely a new growth, and therefore probably more instructive.

[a] I owe my information with regard to Dun-le-Roi to Dr. Féré's paper, "Le Patronage des Aliénés en France," in the Revue Scientifique of August 25, 1894. This able author's "Traitement des Aliénés dans les Familles" (Paris: Alcan. 1893) contains an excellent account of the earlier history of the settlement at Lierneux. He lays down, in an admirable manner, the principles of the domestic treatment of the insane.

A very full, detailed, and impartial account of what has been done at Berlin is to be found in a monograph by Dr. Alfred Bothe (Die familiale Verpflegung Geisteskranker. Berlin: Springer. 1893).

In Berlin, as elsewhere, the authorities were driven to their wits' end by the rate at which the demand for increased asylum accommodation grew. The plan was devised by the authorities of the asylum for the Berlin district at Dalldorf of boarding out a number of patients. The patients are not confined to any one special area: they are scattered all through Berlin and its suburbs. They are boarded, some with relatives, some with strangers; nay, in many cases they are boarded with strangers when their own relatives have refused to take them, and have protested against their discharge. The asylum provides the patient with clothes, and, of course, pays a sum for his maintenance. He is seen at his host's residence by a medical officer of the asylum, at least once in every month, and once in each month—unless in certain exceptional cases—he is required to visit the asylum and be seen by one of the medical officers. Now this is a much better system than that in use in Scotland, where the unhappy lunatic who is boarded out is seen by no one who can claim to have any particular knowledge of insanity or the insane except the Assistant Commissioner of Lunacy, who visits him once a year. He is, however, visited once a quarter by the parish doctor. The probability may be accepted that the latter visit is of a somewhat perfunctory character.

I am aware that it has been objected to the Berlin practice that it merely provides pretty constant skilled attendance on the patients, and that it does not provide posts for officials who are to inspect him once a year, but I need not point out to this Section that the fortnightly medical inspection by a skilled physician, who has had a full opportunity for careful study of the individual case, is more likely to prove efficient than the most carefully-registered annual visit performed under Act of Parliament.

The facts before us show this. During the year 1891–92, two hundred and fifty-four patients were placed in

domestic care; 201 were removed from it. Of the latter number, 107 were sent back to the institution, while 94 became well enough to cease to need supervision and to be removed altogether from the roll of pauper lunatics. Thus it is evident that a liberal use is made of the opportunities for domestic care, and that the experiment of trying how far any particular patient is adapted to it is freely made. Returns to the asylum are comparatively rare in Scotland, but this is due to the fact that few except the quietest class of dements are boarded out in that country. Dr. Bothe truly says: "The oftener we are in a position to place in domestic care patients suffering from severe forms of mental disturbance, the more frequently must the necessity arise for readmission to the asylum on the one hand, while, on the other hand, the more readily we determine to place patients in family care, the better the security is that, as soon as the domestic treatment becomes evidently impossible, the readmission will again take place without delay and without formality."

Four hundred and fourteen patients were thus provided in the Berlin district during the fiscal year 1891–92, and the number has gone on increasing. The system has been now in existence for close upon ten years, and has worked so satisfactorily that when the new second asylum for the Berlin district at Herzberge was built it was adopted there as well as at Dalldorf, and now operates from both centres, though the necessity for boarding out which arose from the overcrowding at Dalldorf no longer exists.

The patients are boarded out chiefly among tradesmen and working people. They share in the domestic life of their hosts, and very commonly in their handicrafts.

The economic advantages of the system are considerable. The average annual cost per head of the patients in the Dalldorf asylum for the year 1890–91 was £38 1s.; the cost of the boarded out was £22 2s. The average cost in the asylum in the year 1891–92 was £38 6s.; of the boarded out, £21 19s.

In conclusion, it may be said—

(1.) That the organised domestic care of the insane is shown by recent experiences in Belgium, France, and

Germany to be capable of an extension not heretofore conceived possible.

(2.) That it can be undertaken without traditional advantages, and even under circumstances formerly looked upon as unfavourable.

(3.) That if it could be adopted in this country, under such limitations as local circumstances may require, it might prove not only beneficial to the insane but a source of considerable saving to the public.

I cannot but think that in Ireland peculiar facilities exist for working out a system of family care of the insane. Our people are kindly disposed towards the afflicted. They are very domestic in their habits, and many of them are unfortunately poor enough to be very willing to undertake any honest method of assisting themselves in the struggle for existence.

ART. X.—*Notes on a Case of Imperforate Anus, with Exhibition of Frozen Section.*[a] By F. W. KIDD, M.D., Master of the Coombe Lying-in Hospital.

THE case which I wish to bring under your notice is one of considerable interest to the embryologist, the anatomist, the surgeon, and the obstetrician. The interest in this case is increased by the fact that it is accompanied by a frozen section of the parts, which has been most beautifully prepared and mounted by Dr. Dixon, of the Trinity College School of Anatomy.

Perhaps a little generalisation as regards this deformity may not be altogether out of place. With regard to the frequency of its occurrence, it has been put down by different authorities as ranging from three in 66,654 deliveries, or one in 22,218, to one in 11,000 births (Cooper and Edwards). Out of 375 cases collected by Leichtenstern, there were 241 males to 134 females. The following quotation from Prof. M'Alister's "Text-book of Human Anatomy" gives a very clear and concise explanation of the way in which the deformity may arise—"In the body of the embryo a tube of

[a] Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, May 10, 1895. [For the discussion on this paper see p. 76.]

hypoblast forms the terminal part of the intestine, which inferiorly shows a trace of its prolongation into the neurenteric canal. This latter communicated dorsally with the central canal of the spinal cord; but this post-anal gut speedily vanishes, leaving the intestine closed behind. At the spot on the surface where the anal opening is subsequently found there is a pit-like invagination termed the *proctodæum*, and lined with epiblast. This extends inwards from the surface beneath the tail fold opposite the blind end of the hypoblast, into which its fundus ultimately opens. In cases where the proctodæum is undeveloped, or misses the hypoblast, the fœtus presents the condition of imperforate anus. In such cases a weak cord, the obliterated post-anal gut, is often recognisable, and is sometimes sufficiently distinct to be a useful guide to the surgeon. The central portion of the alimentary tract or mesenteron is formed from the hypoblast. This hypoblast represents only what is to constitute the mucous membrane of the alimentary canal, the other coats being formed by this hypoblastic portion becoming enveloped in a layer of mesoblast, which divides into two portions, the outer forming the peritoneal covering, while the inner develops into the muscular and connective tissue elements of the intestinal wall."

Owing to this explanation, there are many different forms and degrees, and the classification usually adopted is one followed by Bodenhamer and others, and is as follows:—

1st.—Stenosis of anus at the margin or extending higher.

2nd.—Complete occlusion of anus by membrane or by common integument.

3rd.—No anus present, rectum being abnormal and ending at a greater or less distance from normal situation of outlet.

4th.—Anus is normal—rectum is at variable distance, either obstructed by membrane or occluded for a greater or less distance.

5th.—Anus opens at perineal or sacral region.

6th.—Rectum opens into bladder, urethra, or vagina, sometimes forming a cloaca—normal anus being absent.

7th.—Rectum normal, except that ureters, vagina, or uterus open abnormally into it.

8th.—Rectum is entirely wanting.

9th.—Rectum and colon wanting. Sometimes an opening leads into the intestine at some other part of surface of body.

The case—the details of which I shall now enumerate—belongs without doubt to the fourth division of this classification. This particular form is perhaps more likely to be overlooked than many others, because the anus is to all appearance perfectly formed, and the discovery is only made when doses of castor oil or other purgatives have failed to procure an action of the bowels, perhaps two or three days after birth, or when vomiting of obstruction and regurgitation sets in. Dr. Ball, in his book on the Rectum and Anus, has mentioned a number of interesting varieties—some in which the deformity was due to an abnormal adhesion of the sides of the lower portion of the rectum, in others a membrane existed above the sphincter, and in yet others these conditions seemed amalgamated. In other cases the constituent portions of the intestine passed parallel to each other, the lower portion usually passing in front. One of these is a very remarkable case, recorded by Amussat, in which the anal portion communicated with the vagina, while the rectum ended in a *cul-de-sac*. In this case an incision was made behind the anus. The rectum having been reached was freed from its attachments, was brought down and stitched to the skin, the anus and its communication with the vagina not being interfered with. This procedure afterwards became well-known as "Amussat's operation."

Ball also mentions that there are two theories put forward to account for the deformities of this, the fourth variety—one is that it is due to a failure in the meeting of the mesenteron and the proctodæum; the other, that it is due to an intra-uterine inflammatory occlusion of the fully developed intestine. The advocates of the latter theory contend that the fact of the presence of a cord, in some cases continuous with the outer tunics of the bowel, connecting the two portions of intestine is proof positive of their theory, while their opponents hold that this cord may exist without any intra-uterine obliteration of the intestine, and assert that the explanation exists in the fact that the original hypoblastic intestinal tube was covered over and lined outside by a layer of mesoblast, which divided into two portions—the outer

forming the peritoneum, while the inner layer formed the muscular and connective tissue layer. When the development of the *cul-de-sac* of mesenteron becomes arrested, it does not follow that the growth of the other layers originating from the mesoblast should be arrested too; it can easily be understood that, where there is no mucous coat to be surrounded, this portion of mesoblast can form itself into a rounded cord. Again, it is rare, unless with very severe inflammation, to find that a mucous canal can be obliterated.

In a case detailed by Professor Bennett, occurring at Sir P. Dun's Hospital, he failed to meet the rectum by perineal incision—a colotomy was performed, but the child died. In this case there was a strong firm cord extending from the anus to the *cul-de-sac* of the rectum. Microscopical examination of the cord in this case showed that it was composed solely of muscular and connective tissues without any mucous membrane. Another important point is, that if occlusion was caused by adhesion, the result of inflammation, we should find columnar epithelium at the top of the anal *cul-de-sac;* however, in Bennett's case Ball did not discover a trace of glandular epithelium. All this goes to prove that in this case the occlusion did not depend on inflammatory adhesion.

Dr. Ball suggested that a microscopical examination should be made of the tissues of the anal *cul-de-sac* in the case which I now exhibit, but I regret that such an examination has not yet been made.

The history of the case in point is as follows:—

Case.—Mrs. M. P., on her twelfth pregnancy, was delivered of a female child on the 26th January, 1895. The second stage lasted five hours fifty-five minutes; the note stating that the delay was caused by an ankylosed coccyx. The note on the third day is as follows—"Baby not well, has passed water, but the bowels have not acted since birth—no discharge of meconium." An endeavour was made to introduce a soap suppository. This having proved unsuccessful, the child was brought under my immediate notice. The anus was found normal in every way, but it was impossible to pass anything, even a fine probe, higher up than about half an inch. The nature of the case being apparent, it was then decided to try and reach the *cul-de-sac* of the bowel from he anus already existing. The tissues were divided backwards

from the anus to the tip of the coccyx, so as to afford more room. The dissection was made with a fine tenotome, and the exploration was carried out by using the point of the little finger. A spring wire nasal speculum of small size was used to try and get a view of what tissues were being cut, but was not of much use. To any person who has not tried it this procedure may seem very simple, but in practice it is astonishing how little room there is between the rami of the ischia in a newly-born child, when a finger, even the smallest one, is in the rectum. The whole exploration seems to be more or less one of haphazard. I followed the advice of most authorities, and kept close to the anterior surface of the coccyx. Amussat has recommended the entire removal of the coccyx in this operation—it gives so much more room. The exploration was made for a depth of about an inch and a half or an inch and three-quarters from the anus, but the *cul-de-sac* of the bowel was not recognised. There certainly did not exist in this case any cord-like structure to guide one to the *cul-de-sac*. Neither, when separating the tissues (although, as may be seen by the specimen, I was within about $\frac{1}{16}$ of an inch of the *cul-de-sac*), did I ever feel any impulse on the child crying, nor had I any indication from the sense of touch, that the *cul-de-sac* of the bowel was so near. Having failed, the wound was well powdered with boric acid and plugged with iodoform gauze. On the following day another attempt was made to reach the bowel from the anus, but with no greater success. I hesitated using the knife further from the anus than I could see, or could reach with my finger tip. It was astonishing how the child had stood the operation of the preceding day, and how little sign of hæmorrhage there was. Finding every procedure fail, it was decided to do a left inguinal colotomy. The small incision was made on a level with the crest of the ilium, and at an angle of about 30° with Poupart's ligament. The superficial blood-vessels were easily avoided, as the amount of abdominal distension caused them to be very well marked. The tissues were divided on a director, and when the peritoneum was on the director it was so thin and diaphanous that one of the students, standing quite close by, said there was no tissue at all on the director. The intestine almost "jumped out" into the wound, and was diagnosticated as large intestine by the longitudinal bands on it. The peritoneal surface of the intestine was stitched in a circle to the wound, and the bowel opened. A great quantity of meconium escaped. The wound was dressed with boric acid, iodoform gauze, and a pad, and the child was fed. It seemed to

be relieved by the operation, but gradually sank, and died on the sixth day after the operation, or ten days after its birth.

At the *post mortem* examination, made by Dr. Dixon, there was no evidence of peritonitis, so that the child's death seemed due to exhaustion.

There are, to my mind, several points of interest, namely :—

α. The absence of any cord-like prolongation between the anus and *cul-de-sac* of the bowel that would lead you to the latter.

β. The very small amount of hæmorrhage after the two endeavours to reach the bowel from the anus, and the absence of any sign of peritonitis at the autopsy.

γ. Considering the position of the rectum, it is an interesting question for theorising whether the rectum could or could not have been drawn down to the anus by any surgical process simulating Amussat's operation.

δ. It is worthy of note that, although the tip of my finger must have been within one-sixteenth of an inch of the rectum, there was no perceptible bulging, and no indication of its presence.

I lay no claim to originality, but I think that the case is one sufficiently interesting to bring before the members of this section of the Academy, because it might fall to the lot of any obstetric surgeon to treat some case exactly similar to the one I have just described.

HARVARD MEDICAL SCHOOL.

We have received the eighth *Bulletin of the Harvard Medical Alumni Association*. From the Report of the Committee on the Harvard Medical School we are glad to learn that the extension of the curriculum to four years has not appreciably diminished the number of entering students. The reform is spreading through the United States. A list of twenty medical schools which have adopted the four years' course is given, the University of Michigan having been the first (in 1890). The "number of men with degrees in arts, letters, or science in the entering classes" of the Harvard School, which had been steadily diminishing since 1884, shows signs of recovery.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Animal Tuberculoses, and their Relation to Human Tuberculosis. By Ed. Nocard. Translated by H. Scurfield, M.D. London: Baillière, Tindall & Cox. 1895. Pp. 143.

Of all diseases which affect man there is none which has such an interest as tuberculosis ; this, not only from its widespread distribution and destructive character, but because it is general in almost all kinds of animals, who are often infected by men, and who even more commonly transmit infection to the human race. This fact enables tuberculosis, better than any other disease, to be made the subject of experiment; and, owing to this, there is probably no other malady whose nature is at present so well known, although this knowledge is almost entirely the fruit of the labours of only a few years.

In Dr. Nocard's little book an enormous amount of most interesting and valuable information is contained, most of which has the directest bearing on the preventive (the only true) treatment of tuberculosis in man. Dr. Scurfield's admirable translation makes readily accessible a work whose study cannot too strongly be recommended to every one who has to deal with medicine or hygiene.

The first and longest chapter deals with tuberculosis in cattle, in which animals its frequency is enormous. A good description of the tubercular lesions as they occur in the lungs, serous membranes, glands, abdominal viscera, and other parts, is followed by a histological study of the lesions. It is shown that it is only if the bacillus of Koch can be demonstrated that we may be certain of the nature of the lesion. A clinical description is then given of the symptoms of tuberculosis in its different manifestations.

The section on diagnosis is most interesting. The uncer-

tainty of the clinical diagnosis, particularly in the early stages of the disease, is insisted on. It is generally necessary to proceed to the experimental diagnosis by inoculation of the sputum, or of some other morbid product, yielded by the suspected animal, into a susceptible animal, preferably the guinea pig, whose susceptibility is so great that it may be looked on as a true tubercle test object. In many cases, however, even this method is not practicable, as the matters for inoculation cannot be obtained, owing to the deep-seated or otherwise inaccessible position of the tubercular matter. Then the diagnosis may be made by inoculating the suspected animal with Koch's tuberculin. If the animal react by an elevation of temperature of not less than 1·4° C., he has tuberculosis; if not, not. The rules for this inoculation, the precautions which must be observed in carrying it out and interpreting the results are fully given, and it is demonstrated that if these rules are followed the results may be accepted with confidence, as showing the existence of tuberculosis, but not as showing the age, extent, or gravity of the lesions.

The chief practical interest of the tubercular question is connected with the ætiology and pathogeny of the disease. Since the epoch-making discovery of Koch there is no second opinion on the main fact, that tuberculosis is due to an invasion of the body by the Bacillus tuberculosis. This invasion occurs most commonly either by the lungs or intestine. But other paths are open, such as the skin (very rare), or even infection by coitus with a diseased bull. The infection spreads from animal to animal kept in stables, the transmission taking place through the discharges and by means of the attendants. This spread is a slow process; and in Paris, where tuberculosis used to be rife in the cow-houses, the disease is now rare, because now the cows are brought in just after calving, and are not again put to the bull, but are killed as soon as they cease to give milk; while even in the best kept country stables 40, 60, and even 80 per cent. of the cows are tuberculous.

The question of heredity is very fully considered. If the disease was hereditary to any appreciable degree we should be helpless in the matter of human tuberculosis. It is, how-

ever, conclusively shown that, while instances have been met with in cattle where the congenital origin of tuberculosis cannot be disputed, they are very rare, in fact little more than pathological curiosities, while the spread of the disease is in, practically, all cases due to infection after birth: the fœtus of an infected mother being, at most, born with an unusual proclivity to receive the infection, being "tuberculisible, not tuberculous."

The different methods by which tuberculosis may be experimentally transmitted are carefully considered, and the important fact brought out that infection from the digestive organs is much more difficult than from intraperitoneal or subcutaneous inoculation.

The very important fact that the tuberculosis of animals is identical with that of man is abundantly proved, and interesting cases of infection of cows by a tuberculous cowherd, and the infection of human beings from tuberculous cattle, are recorded.

As to the danger connected with the use of the meat of tuberculous animals, M. Nocard is strongly of opinion that the virulence resides only in the tubercular lesions. Numerous experiments show that the muscles are almost always free, and their use is now generally permitted, except the disease is very far advanced or generalised.

The milk of tuberculous cows is dangerous only when the udders are affected, and even then only when bacilli are present in large numbers, and when the milk is the principal food taken. Boiling completely removes all risk. The Pasteurisation of milk—that is, heating it for 15–20 minutes to 65°–70°—kills the bacilli, and thus renders safe butter, cheese, and other dairy products. The danger of transmission of tuberculosis by vaccination is not serious. Calves are rarely tuberculous; and inoculation by the skin is not readily effected. Calves should, however, be tested by tuberculin before being used as vaccinifers.

The prophylactic means by which tuberculosis in cattle may be stamped out are described; and in an appendix the translator gives a *résumé* of the highly successful work in this direction of Professor Bang.

Finally, some experiments, not altogether conclusive, on

the cure of tuberculosis by subcutaneous injection of creasote are given.

In the following chapters we find an account of tuberculosis as it affects the pig, horse, small ruminants, dogs, and cats, and other carnivora. In the pig the muscle juice is often very virulent; and, as pork is often consumed imperfectly cooked, great caution is necessary. Sheep and goats are rarely tuberculous, except as the result of experimental inoculation. The danger from goats' milk is, consequently, small. Carnivora, except kittens, are not very susceptible to tubercular infection. The disease is, however, by no means uncommon in dogs and cats ; and, considering the repulsively close relationship which many persons hold with these animals, it is not to be surprised at that cases of infection both ways are not unknown.

Tuberculosis in birds is very common, and often causes fearful havoc in poultry yards and game preserves. The lesions (which differ materially from those in mammals) and the symptoms are described; and then the interesting question is discussed as to whether avian and mammalian (including human) tuberculosis are due to the same or only to very similar bacilli.

Cases are on record where outbreaks of avian tuberculosis appeared to be due to infection by the sputum of tuberculous men; but when fowl were made to eat very large quantities of infective sputum they remained free from disease. If, on the other hand, guinea pigs are subjected to intraperitoneal injection of avian tuberculosis they become diseased, although they resist inoculation made subcutaneously. The appearances are different to those which follow inoculation by mammalian tuberculosis. There are rarely nodules, but the spleen is large, red, and soft, and it and the liver and lungs are crowded by bacilli. If these inoculations be made from guinea pig to guinea pig for a few times the lesions become indistinguishable from those produced by primary mammalian tuberculosis. The rabbit is equally receptive to both kinds of tuberculosis; and after two or three transmissions from rabbit to rabbit the lesions in the two cases are indistinguishable.

Inoculation of mammalian tuberculosis in fowl has been

sometimes successful, and can be transmitted from fowl to fowl, while, finally, the tuberculin, which can be prepared from both kinds of bacilli, is apparently identical. "All these facts tend to establish that the tubercle bacillus, so resistant to all causes of destruction, may, however, experience profound modifications by means of successive passages through the organisms of different species of animals." In this way the bacillus of Koch has been modified in the bodies of fowl, and a variety, not a distinct species, produced. Therefore, although we do not know of transmission of tuberculosis from fowl to man, yet we must not look on such an event as impossible. When avian tuberculosis breaks out the only effective course is to destroy all the birds, and, after the most thorough disinfection, to restock the yards. By the use of tuberculin it might be possible to separate the diseased birds from those not already infected.

As stated by the translator in his preface, the most interesting part of this, throughout interesting, little book is the proof which it affords of the small part played by heredity, and the all-important influence of infection in the spread of tuberculosis, both in man and in the lower animals.

Quain's Elements of Anatomy. Tenth Edition. Vol. III. Part II. *The Nerves.* By PROFESSOR THANE. London: Longmans, Green & Co. 1895. Pp. 183.

OUR standard English anatomy has been advanced another stage towards completion; there remain but two other parts, we understand—one on the viscera, the other on applied anatomy—and the task of bringing out the tenth edition will be done. Indeed, the former of the two remaining parts has already been presented to the public, and the other is to follow soon.

The part before us is a fit companion for the best of its predecessors; it is the work of Professor Thane, and it treats of the peripheral and sympathetic nerves. It reminds us strongly of the part on osteology, which was, of course, from the same pen, and we admire in both the clear and exact style, the absence of unnecessary detail, the thoroughness and the accuracy of the work, and the marks which it bears

on every page of care and thought. We also admire and would call special attention to the new illustrations, some of which are beautiful pictures—for instance, Fig. 147, showing the intercranial course of the 3rd and 4th nerves, and Fig. 237, which is an excellent illustration of the abdominal sympathetic.

The chief novelties are—the description of the sympathetic, which is quite up to date, and gives a thoroughly sound and clear account of this intricate system ; and the chapter on the morphology of the peripheral nerves, which is terse and interesting.

An innovation in the present edition which we do not fancy, and which gives the student unnecessary labour, is the method of giving the nerve supply of the muscles by indicating the spinal nerves from which the fibres going to the muscle are derived, instead of or along with the name of the particular nerve as heretofore. We think it would be much better to give the nerve supply as in former editions, and supply the additional information in a tabular form. Most teachers know how students who read Quain labour to get these numbers off when making up the nerve supplies of muscles in the present edition.

With the above trifling exception, we have nothing but our warmest commendation for the work before us, which is excellent in every way.

The following special points we have noted in going through the book :—Two extreme forms of lumbo-sacral plexus are given from Eisler—no mean or normal form. Fig. 204 of this plexus is of doubtful value, while Fig. 210 of the sacral plexus is very good. In the synopsis of muscular distributions sufficient detail is not given—for instance, in the case of the muscles ascending to the hyoid bone. Figs. 142 and 143 might be omitted. Fig. 143 contains a good idea, but it is not complete enough. We do not think that the point at which the fourth nerve pierces the dura mater is well indicated in the description on page 232. The statement on page 242, that the small palatine nerve has been thought to convey motor fibres from the facial nerve to the levator palati and azygos uvulæ muscles, leaves a doubtful impression on the mind of the reader. There is a little

danger of confusion in reading the last sentence but one on page 257. On page 269 is an excellent summary of the vagus. On page 285 the diaphragm might be included with the muscles of the neck in the opening statement about the cervical plexus. The sub-division of the deep branches of the cervical plexus into an internal and an external series, on page 286, is, we think, confusing and unnecessary. The picture of the brachial plexus on page 292 is poor. It is difficult to understand how the anterior branch of the internal cutaneous nerve, after piercing the fascia lata, "runs down near the tendon of the adductor magnus," as described on page 320. Fig. 221 is unnecessarily complicated by showing the overlapping areas. Page 352, the pyramidalis should be included in the synopsis. On page 363, near the middle, the reference 228 is wrong. On page 376 plexus *linealis* does not sound right.

On the whole, we have rarely seen a book so free from misprints or other traces of carelessness, or one with which fewer faults can be found.

This part has our hearty approval.

The Structure of Man: An Index to his Past History. By DR. R. WIEDERSHEIM. Translated by H. and M. BERNARD. Edited and Annotated and a Preface written by G. B. HOWES, F.L.S. London: Macmillan & Co. 1895. Pp. 227.

THE title of this book would, perhaps, at first lead one to expect a work on descriptive anatomy, while in reality the book is a kind of human comparative anatomy in which the various parts of man are examined and explained in the light of comparative anatomy, or, as the preface puts it, "it is an endeavour to set forth the more salient features in the anatomy of man which link him with lower forms, and others in that of the lower forms which shed a special light on parts of the human organism." Considerable attention is given to the abnormalities found in the human subject and their usual explanation by reference to corresponding conditions in the lower animals. Such subjects as polymastism, the presence of a supra-condylar process of the humerus or the os centrale

in the carpus, irregular muscles, Meckel's diverticulum, &c., are carefully treated and explained. The book will be found full of interest, and, perhaps, of novelty for those who are not already acquainted with the matter contained in it.

The original German work is by Professor Wiedersheim, of Freiburg; it has been excellently translated.

An Atlas of the Fertilisation and Karyokinesis of the Ovum. By EDMUND B. WILSON, Ph.D., with the co-operation of EDWARD LEAMING, M.D., F.R.P.S. New York and London: Macmillan & Co. 1895.

THIS very remarkable work consists of photographs, by Dr. Leaming, Instructor in Photography at the College of Physicians and Surgeons, Columbia College, of preparations made by Professor Wilson of the same institution, who has written a valuable explanatory text illustrated by many drawings, besides the photographic figures. The photographs are from preparations of the ova of the sea urchin—*Toxopneustes variegatus*—artificially fertilised, fixed by different methods, chiefly by a mixture of corrosive sublimate and acetic acid, cut in sections 3 to 5μ thickness, and stained by Heidenhain's iron hæmatoxylin and Congo red.

The photographs were made with Zeiss's apparatus by an arc electric light, with 2mm. apochromatic oil immersion and No. 4 projection ocular. Isochromatic plates and a screen stained with tropæolin were used. The plates were slightly over-exposed and intensified. They were developed with hydrochinon. The magnifying power is from 950–1000 diameters, but some figures, as 29, Plate VIII., are magnified 3000 diameters. The figures are reproduced by a mechanical process without interference with the negatives. We can well understand Professor Wilson's acknowledgment of Dr. Leaming's technical skill and Dr. Leaming's complimentary remarks as to the beauty of Professor Wilson's preparations.

The photographs, forty in number, are a selection from a set of nearly 200 negatives, and illustrate in an almost unbroken series the changes undergone by the ovum from its resting stage before contact with the spermatozoon until the

formation of the blastula of sixteen cells with segmentation cavity.

It would be impossible to speak too enthusiastically of the beauty and distinctness of the figures, which fail only as photographs always must fail, in reproducing merely the appearance of one plane of the preparation, and consequently wanting in depth. We would particularly notice the figures in Plate IV. representing the approach of the sperm-aster to the germ nucleus, and those in Plates VII. and VIII. representing the karyokinesis of the segmentation nucleus.

The text, although short, is valuable as giving in brief compass an account of one of the most difficult but most interesting and important processes in nature. The author can speak with authority on this subject, and his own views are not unfrequently at variance with those held by other embryologists. There is first a connected account of the entire process of fertilisation, cleavage, and maturation of the ovum, given in the form of a general introduction.

In *Toxopneustes* the number of chromosomes is 18 or 19 from each sex. The centrosome is formed entirely from the male element, from the intermediate part of the spermatozoon. About it the sperm-aster is developed, and this subsequently divides into two daughter-asters which place themselves at opposite poles of the cleavage nucleus and become those of the first cleavage amphiaster, while between them is developed the spindle from the achromatic substance of the nucleus itself. "These facts seem to demonstrate conclusively that the centrosome cannot play any part in hereditary transmission, since it may be derived from one sex only. It is rather to be regarded as a dynamic element by means of which is organised the machinery of cell division."

The formation of the polar bodies, by which the number of chromosomes is reduced, to be again restored by those introduced by the sperm nucleus, and the exact correspondence in number between those derived from the male and those derived from the female element, are well described and illustrated by good diagrams.

In the descriptive part of the text we meet with many valuable remarks. The linin network of the nucleus is looked on as continuous with the cyto-reticulum, "merely a localised

portion of the general cyto-reticulum enclosed within the nuclear membrane."

Photograph 7, Plate II., shows the interesting phenomenon of polyspermy or the entrance of several spermatozoa. Such eggs never develop. Usually the entrance of more than one spermatozoon is prevented by the rapid formation of the vitelline membrane after the entrance of the first. In photograph 12, Plate III., and in photograph 22, Plate VI., we have represented examples of double fertilisation—two spermatozoa entering at the same moment at different points. Each sperm-head develops an aster; both unite with the egg nucleus. Each aster divides into two, giving rise to a quadruple aster. Such eggs divide at the first cleavage into four cells instead of two, and the entire cleavage is double. An apparently normal blastula stage is reached, but a gastrula is never formed, and the embryos die without attaining maturity. Photograph 19, Plate V., shows the fusion of the two nuclei and the crossing of the astral rays from the two sides, thus demonstrating that those rays are really fibres and not the optical sections of thin plates in a radially arranged alveolar structure.

On page 20 is a valuable note discussing the nature and import of the centriole or dark body seen in some cases in the centre of the centrosome, or, as the author prefers to call it, centrosphere—*i.e.*, the entire central mass of the aster exclusive of the rays. Professor Wilson is of opinion "that the centriole is essentially an effect and not a cause; that it is a product of a specific form of metabolic action, in the centrosome of which it forms a part, rather than the inciting cause of such activity."

As to the formation of the spindle which connects the two asters in karyokinesis, "all the evidence goes to show that the spindle fibres do not properly grow into the nucleus as they seem to, but are progressively differentiated out of the linin network of the aster as a starting point." In toxopneustes there is no spirem stage in the division of the chromosomes. As to the forces which draw the daughter chromosomes apart, the preparations of the author do not support either the views of Van Beneden, that the astral rays and spindle fibres are contractile structures and act

mechanically, or those of Strasburger, that the movement is of a chemotactic nature, and due to an attraction by special chemical products at the spindle poles. The appearances show that the chromosomes move to some extent independently of one another, and when they have reached the centro sphere, there are no thickened fibres seen between them and this structure, as should be if they were drawn thither by contractile bands.

Photograph 33, Plate IX., gives an extremely beautiful cross-section of the karyokinetic figure, from which it is clear that the chromosomes do not surround the spindle, but extend through its entire diameter. There can, therefore, be no distinction between a central spindle and a spindle mantle, nor is there any evidence that the spindle fibres are of two kinds.

The beautiful cleavage figures in the two last plates bring the work to a close.

We have only, in conclusion, again to express our high appreciation of this atlas, both as an artistic production, and as a contribution to science.

Outlines of Practical Physiology; being a Manual for the Physiological Laboratory, including Chemical and Experimental Physiology with reference to Practical Medicine. By WILLIAM STIRLING, M.D., Sc.D. Third Edition, Revised and Enlarged. With 289 Illustrations. London: Charles Griffin & Co. 1895. Extra Crown 8vo. Pp. 402.

THE appearance of a third edition of Professor Stirling's manual testifies to its continued popularity and usefulness. In the present issue a good deal of new matter has been introduced—indeed in this as in the previous editions the chief fault that can be found with the work is that it contains too much. We think that it would take an ordinary medical student a couple of years at least to go through the exercises in such a way as to understand what he was doing and to remember what he had done. In the hands of a teacher, however, who can select from the methods those which seem to him most adapted for the requirements of his class, the book will be invaluable, for it is a well-filled

storehouse of experiments in almost all branches of physiological study.

The arrangement is the same as before. The chemical work comes first—the proteids and their allies, the carbohydrates, fat, and bone. Then we have the blood, its chemical and spectroscopic examination; digestion, glycogen, food stuffs, muscle, nuclein, glycocoll, nucleo-albumin, and a very large section on the urine. In the second part the experimental physiology is dealt with. Beginning with general considerations on electrical instruments—batteries, keys, &c.—we come to the properties of muscle and nerve, which are very fully treated and occupy about one hundred pages. Then we have the heart and vessels, respiration, the central nervous system and the organs of special sense—the eye, of course, taking the largest part.

In an appendix is given a list of books of reference, which will be found useful by the teacher and advanced student; tables giving the properties of the different carbohydrates, aromatic substances, and xanthin bodies; tables for corrections in gas analyses; solubilities of some important substances; and a description of some additional recording apparatus not included in the text. Here we find an account of the ingenious and very practical instruments devised by Professor Birch for his new laboratory in the Leeds College of Medicine. Sections on the microchemical detection of glycogen, iron and phosphorus; on Kjeldahl's method for the estimation of nitrogen; some tables of weights and measures, and a list of the principal instrument-makers completes the work. A very useful feature is the large number of drawings of different pieces of apparatus, and in a considerable number of cases the name of the maker and the price of the instrument are given. From all this it will be seen that the book is intended to meet wants of a higher kind than those of the mere student. He will find in it all he wants and a great deal more, and we cannot but think that the work would be more useful if it were divided in some way into the students' part and the part for teachers. This is hardly effected by the different type in which it is printed, for even in the large type the average student will find far more than he can work through in the time usually at his disposal for

physiology. Nevertheless the book, as a whole, is deserving of great praise, and will still further enhance Professor Stirling's high reputation as a teacher of one of the most difficult and important branches of medical study.

A Manual of Physiology, with Practical Exercises. By G. N. STEWART, M.A., D.Sc., M.D. With numerous Illustrations, including five Coloured Plates. London: Baillière, Tindall & Cox. 1895. Pp. 796.

AMONG the band of young English physiologists whose brilliant and fruitful work has done so much to place our country in the forefront of science, Professor Stewart holds a conspicuous position, and we should anticipate that a work from his pen would be of a very high order of excellence. A study of the manual before us fully justifies these anticipations. The distinguishing characteristic of the work is the "attempt which has been made to interweave formal exposition with practical work." At the conclusion of each chapter a number of practical exercises are given, by which the facts described in the text may be demonstrated. Physiological teaching should be twofold—systematic instruction in the lecture theatre and practical work in the laboratory; and there can be no doubt that the best way to combine these is to make them run concurrently, so that, as Dr. Stewart says, "cross reference from lecture-room to laboratory, and from laboratory to lecture-room, from the detailed discussion of the relations of a phenomenon to the living fact itself, is thus rendered easy, natural, and fruitful." This is the method adopted in this book, and that which Prof. Stewart has adopted in Cleveland, with, as he tells us, and as we can readily believe, distinguished success.

For the ordinary reader who wants only to know the facts at second-hand, the text is quite complete in itself, while the practical student will find the exercises well chosen, typically demonstrative, and not too numerous. The directions for the performance of the experiments are most clearly and fully given, and are, wherever necessary, illustrated by diagrams or drawings. Unfortunately many of the experiments which must be performed on living, although in all cases completely

anæsthetised animals, cannot, in this country, be carried out by the students themselves, and in many institutions may not be even demonstrated to them. The teacher will, however, find many useful hints from the exercises, and with a little ingenuity a good deal of demonstrating work may be done without breach of the law, whether general or local. In any case the reader will find a clear account of how a fact may be demonstrated—a great help in understanding the nature and relations of the fact itself.

In the arrangement of the matter this book differs from Professor Foster's work and many others of the modern text-books, in that the general physiology of muscle and nerve, instead of being put at the beginning, immediately after the blood, comes after all the vegetative functions, immediately before the central nervous system and the organs of special sense. A good deal may be said for both arrangements—the former is unquestionably the more logical, but we think the latter is more practical.

The illustrations are very numerous, and, although in many cases roughly executed, are always intelligible and demonstrative. The five coloured plates give figures of histological appearances which are of prime physiological importance. They are, on the whole, admirably executed, some of the figures being very good indeed.

The book is well printed in large, clear type on excellent paper, and well bound. There is a good index. Indeed, it would be hard to speak too highly of this manual, which in many respects seems to us to be the best of the many systematic treatises on physiology which have recently appeared.

Clinical Lectures on Diseases of the Nervous System. By W. R. Gowers, M.D., F.R.S. London: J. & A. Churchill. 1895. Pp. 279.

These lectures, delivered at the National Hospital for the Paralysed and Epileptic, have been already published in different journals. Many of them have been addressed to qualified practitioners, and have formed a part of the post-graduate courses of instruction which are now so successfully carried on in London.

The lectures, twenty in number, deal with a great variety of subjects:—General principles of diagnosis of nervous diseases; cases which owe their instructiveness mainly to mistaken diagnosis; effects of syphilis on the nervous system; bulbar paralysis; facial paralysis; locomotor ataxy; syringomyelia; infantile causes of epilepsy; neuralgia; lead-poisoning; optic neuritis; and others.

There is not one of the lectures which is not of very high interest and value. They, one and all, abound in facts and general laws, the outcome of the large experience and acute observations of the author, while in every page will be found ingenious speculations and suggestive matter often of more interest and value than the actual facts recorded.

The first lecture, on principles of diagnosis, is of the utmost importance, and teaches a lesson which many will find it hard to learn. The habit of playing with words, of thinking that when a name can be applied to an object we know all about it, is so widespread, that the chief effort most physicians make is to give the case under observation a name—that is, to refer it to some type. In no class of diseases is this so difficult as in those of the nervous system. Here the conditions are so complex that "it not only may be, but it must be, true that the diseases we meet with are so numerous and so diverse as entirely to baffle an attempt to range them under definite types that can be designated by definite names."

"The method which should be adopted is this—whenever you find yourself in the presence of a case that is not at once and completely familiar to you in all its details, forget for the time all your types and all your names. Deal with the case as one that has never been seen before, and work it out as a new problem, *sui generis*, to be investigated as such."

Such a procedure requires the application of anatomy and physiology, and is possible only to those who possess a good knowledge of these subjects. It is only to such, however, that the diagnosis of diseases of the nervous system, or indeed of other parts, is possible.

It would be impossible for us to go *seriatim* through these lectures, nor would it be wise to do so. Their value would

often be lost if the matter were given in any words other than those in which they were delivered. We may, however, call attention to the profound and yet clear views put forward on the action of syphilis and of many other morbid poisons on the nervous system; to the affections of vision in unilateral disease of the brain: to the two concluding lectures on optic neuritis, and the methods by which it should be examined; to the affections of the afferent nerves of muscles, as given in the two lectures on locomotor ataxy; to the contractions which occur in the partial recovery of paralysed muscles, more particularly in those of the face; to the causation of neuralgia, and many others which will be found by the reader of this volume.

It would be hard to over-estimate the interest and instruction which the reader will derive from these lectures, in many of which Dr. Gowers will be found at his best; more than this we need not say.

The Diseases of Children's Teeth: their Prevention and Treatment. A Manual for Medical Practitioners and Students. By R. Denison Pedley, M.R.C.S., L.D.S., Eng., F.R.C.S., Edin.; Dental Surgeon to the Evelina Hospital for Sick Children, Southwark, London. Published in London by J. P. Segg & Co., Regent-street; in America by the S. S. White Dental Mfg. Co., Philadelphia. 1895. Pp. 268, with numerous illustrations.

That medical men, more particularly those whose sphere of work lies in remote districts, should possess some knowledge of dentistry, is a proposition that few will deny; yet if more subjects are added to the already overburdened medical curriculum, not even the five years' course of study now enjoined by the Medical Council will be sufficient; but where a man is anxious to equip himself so as to meet the emergencies of country or colonial practice, he will doubtless find some time in his student career to study practically how to relieve the suffering that so frequently attends that ever-present malady, dental caries.

Mr. Pedley's aim in writing on the diseases of teeth in children was, no doubt, to attack caries at its first

manifestations, and thus prevent the wholesale destruction of teeth too often seen in adult life. The author in his preface states that he writes more particularly for the medical practitioner, and expresses the hope that his work may also be of use to the dental student, while we think that Mr. Pedley's book may be read with profit and advantage by those who follow medicine in its more general aspect. We scarcely think that it is likely to prove of much use to the dental specialist who has so many much better text-books to which he can refer.

On the whole Mr. Pedley has accomplished his task in a fairly satisfactory manner if we keep in view the scope of his book. The chapters dealing with the structure and eruption of the teeth are brief but clear, and well up to date. The description of caries may likewise be commended, but the account of pulpitis is decidedly weak; none of the signs or symptoms are given, and the whole description will be of no use to those who seek for information in their treatment of children, as what little is written on the subject applies more properly to older patients. What the author has to say on the subject of periodontitis is excellent, more especially the cases he cites where this affection, running its course unchecked, has been followed by pyæmia, and those cases of necrosis and foliation following the eruptive fevers. We doubt if the medical practitioner will be able to do much in the treatment of irregularities beyond the judicious extraction of certain teeth. We do not very much care for this chapter, and further, we venture to think that any person who attempted to take an impression and make a plaster model according to the directions given him by Mr. Pedley, would be very much disappointed with the result. The chapters relating to oral hygiene and treatment are certainly the most important and the best in the book. The practitioner will here find a safe guide in such matters as the care of teeth during a long illness, the best forms of tooth powder, &c. The directions for filling both temporary and permanent teeth are most excellent and lucid, and although we cannot agree with Mr. Pedley in thinking that iodoform will be successful in preventing the remains of a pulp from

becoming putrid, still the general tenor of his remarks is good, and cannot fail to be useful.

The book itself is well printed with large type and on thick paper, which makes an imposing volume. We think a less pretentious form would have suited its contents better, as, perhaps, its size may deter those persons from reading it whose time is precious, and who would be materially benefited by its perusal.

Notes on Surgery for Nurses. By Joseph Bell, M.D., F.R.C.S.Edin.; Consulting Surgeon to the Royal Infirmary, and Surgeon to the Royal Edinburgh Hospital for Sick Children. Fourth Edition, thoroughly Revised. *With an Additional Chapter of General Advice to Nurses.* Edinburgh: Oliver & Boyd. London: Simpkin, Marshall, Hamilton, Kent, & Co. 1895.

The popularity of this little volume is the best testimony to the fact that its publication has supplied a want in the special department of professional literature with which its author deals. The original issue embraced "only the main points of the lecture, which for twelve years" the author had been in the habit of delivering to the nursing staff of the Edinburgh Royal Infirmary. The present edition comprises "revision and corrections, bringing it up to date; and has an additional Chapter of General Advice to Nurses."

Elementary Physiology. By J. R. Ainsworth Davis, B.A., Trinity College, Cambridge; F.C.P.; Professor in the University of Wales, and Professor of Biology and Geology, University College of Wales, Aberystwith. London: Blackie & Son. 1895.

This booklet of 223 pages gives a concise description—for popular use—of the structure and functions of the human body. It need hardly be said that in the attempt to compress so vast a subject within so very small a space, the author was obliged to avoid detail as well as discussion, but he has really done his work extremely well. There is a great deal of outline information conveyed, and in very clear and well-

chosen language; the illustrations are numerous and very well chosen, and the type and paper are excellent. We are only puzzled to know to what class of readers we ought to recommend the little book. It is too good for the inquisitive member of the lay public; and will not, of course, be good enough for the specialist student. A special chapter—the last—deals with the secretion of milk and digestion in the cow, with the expressed hope that "students of agriculture and dairying" may find it useful.

The Treatment of Pulmonary Consumption: a Practical Manual. By V. D. HARRIS, M.D. Lond., F.R.C.P., Physician to the City of London Hospital for Diseases of the Chest, &c.; and E. C. BEALE, M.B. Cantab., F.R.C.P., Physician to the City of London Hospital for Diseases of the Chest, &c. London: H. K. Lewis. 1895. Pp. 483.

THE scope of this work is by no means confined to the treatment of consumption. It commences with a general review of consumption, a historical sketch of its treatment and pathology, remarks on its causation and prophylactic treatment, and an account of its symptoms and physical signs.

Then we find in considerable detail the treatment of early phthisis, of active and progressive disease, and of the quiescent or cured disease. The remarks on the treatment of these conditions are sound, although containing nothing that calls for special note.

The next chapter—by far the longest in the book—relates to the treatment of complications. Some of the so-called complications—*e.g.*, croupous pneumonia and thoracic cancer—do not seem to have much direct connection with consumption. Laryngeal troubles are well described, and the reader will have no excuse for forgetting that in cases of phthisis, in which there are both laryngeal and pulmonary lesions, the larnygeal mischief is merely a part of a widely-spread malady—a fact which some throat specialists seem often to overlook. In cases of tubercular peritonitis the authors approve the use of mercurial ointment, with the addition of tapping with a trochar and canula if there

be much ascitic fluid. If these measures do not suceeed, they would then try incision and drainage.

The next chapter relates to the treatment of symptoms—fever, hæmoptysis, sweating, &c.

The remainder of the work contains chapters on special modes of treatment, such as tuberculin, inhalations, the use of antiseptics, and climatic treatment. With regard to the creasote and guaiacol treatment about which we have heard so much lately, the authors, from an experience of many hundreds of cases treated with the latter drug believe that it exercises a favourable influence on the course of many cases of phthisis; the digestion improves, and fever often subsides. On the other hand, they are convinced that it only acts indirectly—that it cannot in any way act as an antiseptic or cause the death of the bacilli in the tissues. They consider it an often useful, though frequently overrated, drug. A good many formulæ are given for its administration.

The section on climatic treatment is the most disappointing in the book. It runs to only about 40 pages, most of which are taken up with general considerations. The reader will find very little information about the various health-resorts to which consumptives resort. When we consider that almost every phthisical patient, whose means admit of his doing so, goes to some health-resort at home or abroad during some period of his malady, we think more specific information about the climate, accommodation, cost, amusements, &c., of, at any rate, the best-known sanatoria, should have been given. We hope that in future editions the authors, instead of giving a list of works on climates and health resorts, will themselves give us their views on the subject in detail.

The work is written in a cautious and scientific spirit, which deserves praise: there is none of that humbug so common in works on consumption, which sees in each latest therapeutic novelty a huge advance, if not a perfect means of cure. At the same time we are in some ways disappointed with the work. A great deal of space is taken up with pathology, symptoms, and other considerations, which are necessarily here treated of so briefly as to contain nothing

very new or valuable; and the remarks on treatment often seem to us rather vague in tone, as if addressed to the disease in general rather than to definite and individual cases. A large number of prescriptions are introduced, written mostly in Latin; we could have wished they had all been in English, we should then have been saved such a mixture of English and ungrammatical Latin as—

"Carlsbad salts" - ℥ii.
"Ex aquâ tepidâ - Oss.
"To be taken every morning."

Guy's Hospital Reports. Vol. LI. London: J. & A. Churchill. 1895. Pp. 272.

THE present volume contains a number of valuable and practical papers. An abstract of an address on temperature after operations, delivered by Thomas Bryant, M.Ch., in 1879, is interesting as showing how successful the author's treatment was seventeen years ago, and how little change has since taken place in his methods.

Mr. L. A. Dunn reports an interesting case of multiple atrophying sarcomata of the head and neck. It is illustrated by a series of photographs and an excellent coloured plate.

John Fawcett, M.D., gives a series of experiments with piperazin, intended to determine its solvent power upon uric acid calculi in urine, its value in gout, and its effect when given to birds, uric acid deposits having been produced in them by injections of potassium chromate. The most important conclusion drawn:—

"The drug neither relieves the pain, nor does it increase the uric acid elimination. It is also very expensive, and so as it does not appear to possess any greater value, but rather less, than the drugs already recognised in the treatment of gout, I can see no indication for continuing its use further."

An important paper by Theodore Fisher, M.D., is communicated by the editors; it deals with "Hypertrophy of the Heart without gross organic lesions," most of the cases reported being due to the cause first pointed out by Bollinger—namely, over-indulgence in alcohol. Dr. Fisher gives five cases which occurred in the Bristol General Hospital last

year, and notes of cases from the records of Guy's Hospital, 1884-93. The author considers it is an hypertrophy which is not an evidence of strength, but of weakness, as the heart fails and leads to the death of the patient. The author draws attention to the many points in which the action of alcohol has not yet been elucidated.

Mr. Bellingham Smith deals with "the question of amputation in senile gangrene." When gangrene is confined to the toes an expectant antiseptic treatment should be adopted; when it reaches the dorsal or plantar surface of the foot, a high amputation—preferably through the knee-joint—is indicated. The picking and cutting away of dead tissues, and amputation close to the affected area should be avoided. Amongst the other papers are:—"On Empyema following Lobar Pneumonia," by W. H. White, M.D., and A. C. Pearce, M.B.; "On Scarlatinal Nephritis and its Varieties," by F. M. Turner, M.D.; "A Case of Bilateral Paralysis of the Facial and Auditory Nerves," by P. H. Pye-Smith, M.D.

The "Every Hour" Diary, 1896. Dublin: Eason & Son.

THIS ingenious diary enables a record to be kept of engagements, appointments, special business and events for any hour of any day throughout the year. "Now's the day and now's the hour" wrote Burns, and this is the appropriate motto which Messrs. Eason have placed on the title page of their diary, which is well described as a time-saving indexed novelty. Each page contains space for a week's entries, each day being divided into hourly spaces from 9 a.m. till 6 p.m., with room in addition for entering early morning and late evening engagements.

The diary complete in a limp cover costs a shilling; if enclosed in a portfolio blotter with pockets, its retail price is one and sixpence.

Transactions of the Grant College Medical Society, Bombay. From January to December, 1894. Bombay, 1895. Pp. 129.

THIS volume is an interesting illustration of the spread of western Medicine in, at least, one part of British India.

The flourishing Society whose "Transactions" it contains numbered, in 1894, 168 members, of whom less than a dozen were Europeans.

Considerably more than half of the volume is occupied by a report of discussions on Pasteurism and Bacteriology. Dr. M. B. Colah began by reading a paper on the subject on the 30th October, and the controversy was carried on at adjourned meetings on 13th Nov., 24th Nov., 8th, 14th, 18th Dec. The school which believes anything, and the other which believes nothing, were ably represented, as at our own side of the globe; and as happens sometimes in temperate climates, everyone no doubt issued from the discussion retaining his own opinion.

Cod-Liver Oil and Chemistry. By F. PECKEL MÖLLER, M.D. London. 1895.

THIS thick quarto volume of more than 600 pages represents a curious combination of two works, as might be inferred from its title.

Part I. treats of cod-liver oil, in the preparation of which the firm of Möller & Co. is interested. An account is given of the country of Norway, and especially of the Norwegian fisheries. Then follows a description of the method of manufacturing cod-liver oil by P. Möller's process. The pharmacy of the oil is discussed, and its chemical composition is detailed by Heyerdahl, who gives an admirable *résumé* of the work which has been done.

It is usually held that cod-liver oil contains from 95-98 per cent. of olein, palmitin, and stearin. Heyerdahl, however, does not find any olein or stearin in the oil, but considers that he has established the existence of two new glycerides—*viz.*, therapin, about 20 per cent., and Jecolein, likewise about 20 per cent. The only saturated acid he could find was palmitic acid. He ascribes the rancidity of cod-liver oil to the formation of hydroxy-acids, which are very irritating to the stomach.

Under the belief that the proper appreciation of the chemistry of fats requires an intimate acquaintance with modern organic chemistry, Dr. Möller devotes the larger

section of his book—nearly 500 pages—to that science. He deals in detail with the law of atomic linking, and gives numerous (nearly 1,700) graphic formulæ, which aim at conveying the characteristics of the molecule, the nature and number of its atoms, their positions and their relations to each other.

This part of the book is, in fact, an incomplete treatise upon modern organic chemistry, chiefly in the form of an elaborate illustrated catalogue of formulæ, which are useful for reference.

In the last section an interesting account is given of stereo-chemistry—*i.e.*, the position of atoms in space—and the diagrams here are certainly helpful in enabling one to grasp the principles of this, the newest offspring of chemical theorising.

CLINICAL ELECTRIC CABINET.

Sir B. W. Richardson, M.D., describes (Asclepiad 43) a clinical electric cabinet used in the London Temperance Hospital. It is easily wheeled about, and can be attached to the electric light wires. It contains all the apparatus required for diagnosis and for treatment.

CHILD INSURANCE.

At the recent session of the sixth annual convention of Societies for the Prevention of Cruelty to Children in New York, a resolution was adopted that it was the sense of the convention that the practice of insuring the lives of children under 10 years of age, as at present conducted, is against public policy. It calls upon all those who are interested in philanthropic work to use all legitimate efforts to procure the passage of laws that shall prohibit a practice in this country that has proved so dangerous in other parts of the world.—*Jour. Am. Med. Ass.*

HERMES MEDICAL SUPPLEMENT.

This periodical, of which the first number is before us, is the official journal of the Sydney University Medical Society. The Society was founded in 1886, three years after the establishment of the Medical School. The journal will be published once in each term, and will contain twelve pages; so that it will not add seriously to the flood of medical periodical literature.

PART III.

SPECIAL REPORTS.

REPORT ON
MATERIA MEDICA AND THERAPEUTICS.[a]

By Walter G. Smith, M.D.; Ex-President of the Royal College of Physicians of Ireland; Professor of Materia Medica, School of Physic in Ireland, Trin. Coll. Dubl.; Physician-in-Ordinary to His Excellency the Lord Lieutenant; Physician to Sir P. Dun's Hospital.

The therapeutical record of the past year has not provided us with any sensational or striking innovations. It may be noted with a sense of relief that fewer chemical novelties than usual have been proposed for trial, and the long list of synthetic remedies has had scanty additions made to it. There has been a lull in antiseptics, but a good many papers have been published upon drugs acting upon the nervous system, especially hypnotics. Of the newer hypnotics, trional seems likely to hold its ground, and to be deserving of approval.

The "predominant partner" in the current literature of the time is "serum-therapeutics," which has engrossed a large share of attention.

Among the novelties noticed in the present summary may be mentioned nosophen, iodoformin, argonin, urotropin, apolysin, citrophen, and saligenin.

PHARMACY.

An Ichthyol Reaction.—Mr. Harold Wyatt had occasion to dispense the following prescription:—℞. Morphinæ hydrochlor. gr. iv.; ichthyol ammon. gr. xxx.; ung. petrolei, ad. ℥i. Misce; fiat unguentum.

[a] This Report is based upon an article by the writer in the "Year-Book of Treatment" for 1896.

On rubbing the morphine hydrochlorate with the ichthyol on an ointment slab, the smooth cream at first formed suddenly became clotted, drops of watery liquid separated, and the clotted portion left the tile and adhered to the spatula. By the addition of two grains of powdered soap he was finally able to turn out a smooth and presentable ointment.

In an attempt to explain the decomposition (for such it undoubtedly was), morphine hydrochlorate and ichthyol were heated over a water bath until the ichthyol became solid, leaving a clear aqueous liquid containing chloride of ammonium, which was proved by the application of the usual tests. It was evidently an instance of double decomposition, resulting in the formation of a morphine ichthyol-sulphonate and ammonium chloride. The pure alkaloid morphine gave a similar compound with the liberation of ammonia gas. When quinine hydrochlorate was decomposed by the addition of successive portions of ammonium ichthyol to a hot aqueous solution placed over a water bath until there was only a slight precipitate, on testing a drop of the aqueous liquid with Dragendorff's iodo-bismuthic alkaloid reagent a quinine ichthyol of a peculiarly brittle character was the result. The following equation probably represents the reaction :—

$$\underset{\text{Ichthyol ammonium}}{C_{28}H_{36}S_3O_6(NH_4)_2} + 2\underset{\text{Quinine hydrochlorate}}{(C_{20}H_{24}N_2O_2HCl,2H_2O)}$$

equals

$$\underset{\text{Quinine ichthyol-sulphonate.}}{C_{28}H_{36}S_3O_6H_2\cdot 2(C_{20}H_{24}N_2O_2)} + 2NH_4Cl + 4H_2O$$

From this it will be seen that alkaloids form ichthyols as readily as do the alkali metals, the resulting ichthyols being of a firmer consistence, and well suited to internal administration in pilular form.—(*Pharm. Journ.* Dec. 14, 1895).

An Incompatibility.—The reporter noticed the solution made from the subjoined prescription turned a dark red colour, which proved permanent:—℞. Hydrargyri perchlor, gr. iv.; resorcin, ʒi.; spir. chloroformi; spir. æth. nitr., āā ʒij. M.

This produced severe irritation upon the skin of the patient for whom it was ordered.

The cause of the coloration is probably formation of a red nitro-compound, analogous to the green nitroso-compound formed by the interaction of antipyrin and nitrous ether.

Professor Emerson Reynolds informs me that mono-nitro-resorcinol, $C_6H_3(NO_2)(OH)_2$ is easily produced when an ethereal or alcoholic solution of resorcinol $C_6H_4(OH)_2$, is treated with dilute nitric acid containing some nitrous acid. It is volatile, and crystallises from dilute ethylic alcohol in orange-red prisms, which melt at 85°. There is an isomer, but it is pale yellow and non-volatile.—(*Pharm. Journ.*, Aug. 3, 1895.).

HYPNOTICS.

Sulphonal Group.—Three organic "sulphones" (*i.e.*, combinations of SO_2 with organic radicals) have now been in the hands of practitioners and pharmacologists for some time. They contain, respectively:—

Two molecules of ethyl—viz., dional (common sulphonal).
Three ,, ,, trional.
Four ,, ,, tetronal.

So far the judgment of the profession seems to be this:—

Sulphonal holds its ground, and is by far the most largely prescribed. But it is admitted to have some drawbacks.

Trional is gaining in favour, and offers some distinct advantages over sulphonal.

Tetronal has not made much headway.

Observations on man do not fully confirm Baumann and Kast's theory—*i.e.*, that the hypnotic action increases with the number of ethyl groups in the molecule. There is no important difference in the dose of any of these three drugs in man (*cf.*, Studies in Therapeutics, *Brit. Med. Journ.*, Jan. 19, 1895).

Comparative action of Sulphonal, Trional, and Tetronal.—Dr. Morro, at Baumann's instigation, has made a comparative study of these drugs:—

1. Sulphonal accumulates in the body, and its elimination is not completed in less than three days. It resists metabolism.

2. Trional is more easily and completely decomposed by the metabolism of the body than sulphonal. Hence it is not cumulative.

3. Tetronal is excreted unchanged in the urine, although not to the same extent as sulphonal. Accordingly it also exhibits a postponed and cumulative action.

These facts throw light upon the clinical action of these drugs, and explain the superiority of trional.—(*Ther. Monatsh. aus Deut. med. Woch.*, 34, 1894).

The Comparative Values of Trional, Chloralose, and Somnal.—In patients not the subject of psychical trouble 1 to 2 grammes of trional (in weakly women, 1 gramme) produces a dreamless sleep, but has the same disadvantages on administration and awakening as sulphonal; over that drug it has one great advantage, that its use can be continued for a year without producing circulatory, respiratory, or digestive troubles. It acts most beneficially in the insomnia with restlessness of chronic mania and in alcoholic delirium, in which large doses may be given with good effect, but its depressing action is harmful in melancholia and cerebral neurasthenia especially, in which it increases the depression. It should be prescribed at intervals of two days, to avoid cumulative action. Chloralose has one great disadvantage, that it produces symptoms of intoxication, shown by an increased reflex excitability of the cord, and even convulsions, especially if the dose, which is uncertain for the individual, exceed 60 centigrammes, and less in the case of debilitated, hysterical or alcoholic subjects. The convulsions rapidly disappear after awakening without any ulterior effect. Somnal is most beneficial in procuring sleep in acute melancholia; in other subjects it usually produces first of all slight intoxication, then sleep with pleasant dreams. After doses up to 3 grammes sleep with interruptions comes on in about half an hour, and after 5 grammes profound sleep. On awakening there are no disagreeable after-effects; this is its great advantage over other hypnotics. It has none of the motor troubles of chloralose. It is contra-indicated in dyspepsia and a tendency to diarrhœa. In their relative actions trional acts more slowly than chloralose, and the after-effect is more prolonged, and awakening is painful; chloralose before producing sleep induces an intoxication, but the awakening is fresh and agreeable. The intoxication of chloralose is without danger, which is not the case in that rare occurrence with trional when severe symptoms which are without danger appear; trional, however, has the advantage of being more uniform in its action, and its minimum

useful dose is more easily found. Fatal results have been recorded after the administration of from 20 to 25 centigrammes of chloralose, although over 60 have been given without serious symptoms being produced. Marie maintains that with chloralose the best results are obtained by beginning with 10 centigrammes, gradually increasing the dose to 15 or 20.—(*Practitioner*, Aug., 1895, from *La Presse Méd.*, Mar., 1895).

Trional.—A great number of communications upon this drug have appeared in 1895.

Spitzer (*Wiener klin. Woch.*, No. 23, 1895) gives his experience of the use of trional in twenty-five cases of various forms of disease accompanied by pain and insomnia. In nineteen cases trional succeeded. In six cases trional either failed or acted only for a short time, and had to be followed by morphine; these cases were phthisis (four cases), myoma uteri and arterial sclerosis. Spitzer maintains that trional is a hypnotic not only in various mental conditions, but also in lung and heart diseases. He states that it is especially useful in intercostal neuralgia, sciatica, lumbago, and in the lancinating pains of tabes dorsalis. He considers it to approach closely to morphine in its effect, and suggests it as a substitute for morphine. Sleep is obtained usually soon after the administration of the drug, and in most cases continues through the night. In no case was any injurious effect on heart or respiration observed. In a few cases gastric disturbance took place, and sometimes vomiting after awakening; this the author considers an idiosyncrasy, as is the case with morphine (*Brit. Med. Jour., Epit.*, Sept. 7, 1895).

Goldmann believes trional to be one of the best hypnotics we have. It is to be preferred to sulphonal on account of its prompter action, and greater freedom from injurious consequences. The dose should never exceed 2 grammes, and it should be administered freely diluted with a warm liquid.—(*Therap. Monatsh.*, Nov., 1894.)

Beyer's observations lead him to essentially the same conclusion.—(*Wien. mediz. Blätter*, 25).

Claus (*Wien. klin. Rundschau*, 1894, No. 45) speaks of the value of trional in the sleeplessness of children. It is mostly to be avoided in the insomnia of organic nervous disease,

such as meningitis, &c. It is especially useful in chorea, convulsions, and the pavor nocturnus. In a case of chorea reported by the author, with marked sleeplessness, it had the best effect. Pavor nocturnus is a condition in which the child suddenly wakes up terrified and often cannot sleep again. A case of this kind is related in which trional was used with success. In one case the child showed some ataxia on the following morning, probably due to too large a dose of the drug. Trional is of little service when the sleeplessness is caused by pain. The doses used by the author are from 3 to 6 grains for infants from one month to one year, increased up to 15 or 20 grains for children from six to ten years. In the insomnia due to toxic influences chloral is more effective.—(*Practitioner, from Inter. klin. Rundschau*).

Similar testimony from Wollenmann (*Clin. Excerpts.*, June, 1895). Claus has further obtained excellent results with trional in thirty cases of neurasthenia, average dose 1½ grammes.—(*Wien. klin. Rundschau*, 21, 1895).

In mental diseases Svetlin and Obersteiner speak highly of trional (*Wien. klin. Woch.*, 14, 1895). Guttmann considers that among hypnotics trional offers the greatest advantages with the fewest drawbacks. Hæmato-porphyrinuria as been observed after it.—(*Reichs., Medic.-Anz.*, 8-10, 1895).

LOCAL REMEDIES.

Nosophen.—Proposed as a substitute for iodoform. Seifert (*Weiner klin. Woch.*, March 21, 1895, p. 213) gives the results of a trial of nosophen. The latter (tetraiodide of phenolphthalein) is a pale yellow powder, tasteless and inodorous, and contains about 60 per cent. of iodine. It is insoluble in water and acids, slightly soluble in alcohol, more readily in ether and chloroform, and easily in alkalies without undergoing change. It reacts chemically as a fairly strong acid, and forms salts with sodium, mercury, &c. It and its sodium salt are absolutely non-poisonous, and iodine is not set free in the organism. (*a*) It is specially adapted, owing to its insolubility and lack of odour, to the after-treatment of operations on the nares: (1) As an insufflation applied after the cautery (chemical or galvanic) it prevents suppuration and formation of adhesions. (2) In rhinitis

sicca it causes no irritation and no secretion. (3) In rhinitis hypersecretoria it diminishes the secretion and cures the inflammation quicker than bismuth, aristol, europhen, or sodium sozoiodolate. (4) It appears to shorten the course of rhinitis acuta. (5) In one case of nasal diphtheria, where it was used, the membrane disappeared in four days. (*b*) In venereal diseases: (1) Six cases of balanoposthitis were cured in three days. (2) In cases of soft chancre it was equal to europhen if precautions were taken to prevent it forming a crust and retaining the secretion by first cauterising the sore with liq. ferri. (3) In hard chancre the number of cases treated was too small to form any opinion. (*c*) One case of traumatic weeping eczema was cured in a remarkably short time by using nosophen in powder.—(*Brit. Med. Jour.*, *Epit.*, April 13.)

Europhen.—This substitute for iodoform is undoubtedly an agreeable and efficient remedy, and I have used it repeatedly during the past two years. De Buck and Walton (*Ext. de la Flandre Méd.*, 1894) treat of the surgical applications of europhen. Iodoform has some great disadvantages. It often irritates the skin, and provokes erythema, urticaria, &c. It is a bad cicatrising agent; granulating wounds dressed with it become indolent, flabby, and are slow to be covered with epidermis. Its odour is most objectionable, especially for private practice. The hitherto suggested methods of deodorisation of it are unsatisfactory. Lastly it needs careful watching on account of its toxicity. Iodoform poisoning is capricious and peculiar, suddenly bursting forth without prodromata in the susceptible, causing grave cerebral disturbances which may even be fatal. The merits of iodoform rest on its great proportion of iodine (96·47 per cent.). This, loosely fixed in the molecule, separates itself continuously in presence of organic juices, and to this nascent iodine is due its microbicidal action on infected wounds. Various iodised substances, mostly of the aromatic series, have been brought forward of recent years to obtain the advantages of iodoform without its disadvantages. Such are the sozoiodols, losophan, and antiseptol. Since, however, their iodine is not liberated freely, they cannot replace iodoform. Aristol and europhen present stronger claims. The latter (isobutyl-ortho-cresol-

iodide—28 per cent. iodine) is superior to iodoform in that it has a very slight agreeable odour, feeble toxicity, lightness (five times lighter). It possesses almost the antiseptic properties of iodoform, slowly frees its iodine in alkaline media, diminishes secretion, and opposes diapedesis of the white corpuscles. Clinical experience has shown its antivenereal and antisyphilitic value; and Jasinsky and Christmann attest its antituberculous properties. Europhen keeps wounds very dry, favours the reunion of sutured wounds, and the granulation and cicatrisation of open sores and cavities. The authors give twenty instances of its use. The only drawbacks noted were one case of well-marked erythema, and complaints from two or three patients of slight local smarting. It strongly adheres to everything it touches, a property which, if advantageous as regards wounds, may present inconveniences to instruments and the surgeon's hands.—(*Brit. Med. Journ., Epit.*, May 18, 1895.)

Strauss also strongly recommends europhen. It is lighter than iodoform, and 1 part of it goes as far as 5 parts of iodoform in covering a surface. Since it is readily decomposed and gives off free iodine, it should not be prescribed with starch pastes, metallic oxides, or mercurial salts. Lanolin is an excellent vehicle, and powdered talc may be added.

Europhen has now been extensively employed by a large number of observers, and has found its scope in dermatology, syphilitic sores, gynæcology, dressing of wounds, in affections of the nose and larynx, and of the ear and eye.—(*Deutsche med. Zeit.*, 1894.)

In America europhen has largely supplanted iodoform, and it is lauded by Eldredge (*Cincinnati Lancet-Clinic*, Mar., 1895), and Waugh (*New Engl. Med. Monthly*, July, 1895).

Aristol, an iodised thymol, was first brought under notice in 1890, and still attracts some attention.

Gevaert has used it with good effect in lupus, and also recommends it in suppurating bony cavities—*e.g.*, of frontal sinus and middle ear (*Flandre Méd.*, 1894). It is said to be especially useful in burns. In phthisis its hypodermic use (in sweet almond oil) has found some to recommend it, but the results are not sufficiently encouraging, and the operation

is followed by smart pain.—(Grusdieff, *Ther. Woch.*, Sept. 1, 1895.)

Iodoformin is stated to fulfil the condition of an odourless compound which yet contains the iodoform molecule unaltered, in the proportion of 75 per cent. It is a fine white powder, turning yellow by exposure to light. In presence of acid or alkaline fluids iodoform is liberated. The powder is absolutely unirritating, and is prepared by Marquart,—(*Ther. Monatsh.*, Sept., 1895.)

Argonin.—Under this name Liebrecht describes a compound obtained by treating the sodium combination of casein with silver nitrate and precipitating with alcohol. When dried it is a white powder, easily soluble in hot water, sparingly in cold water. By careful manipulation solutions containing 10 per cent. and upwards can be prepared. Its solutions react neutral to test-paper, and must be preserved from the light.

Experiments by Meyer show that argonin is a disinfectant of no inconsiderable antiseptic power. It contains 4·28 per cent. of silver, and is perhaps worth trying locally in affections of mucous membranes. To begin with, use an aqueous solution 1·5 per cent.—(*Ther. Monatsh.*, June, 1895.)

Tannigen is the diacetyl derivative of tannin. It has been employed with good results in the treatment of chronic diarrhœa, especially that occurring in phthisical individuals. This remedy is administered internally in doses of 3 to $7\frac{1}{2}$ grains (0·20 to 0·50 gramme), and even as high as 60 grains (4 grammes) a day. Locally applied in a 3 per cent. solution in 5 per cent. of sodium phosphate solution, tannigen has rendered good service in the treatment of chronic pharyngitis.

Since Meyer and Müller reported favourably of it, Künkler and Drews have added their testimony; and De Buck concludes that it is a prompt and valuable remedy in acute and chronic catarrh of the bowels.

It can be readily taken stirred up in milk (*Wien. klin. Rundschau*, 1805.)

Ichthyol.—Recommended in gonorrhœal epididymitis by Mayländer (*Pest. Med.-Chir. Presse*, 1895), and in acute suppurations by Liscia (*Gazz. degli Ospedali*, 1895).

Van der Willigen warmly commends ichthyol in the treat-

ment of fissures of the anus. The pure drug is introduced into the anus by a brush. The contraction of the sphincter forces this into all the folds of the mucous membrane. Little pain is excited. Treatment should be repeated daily. The patient is given liquid diet and occasionally castor oil. The first patient, who had previously been treated by every means short of operation, was cured in eight days, the other three in two or three weeks. One had already been subjected to operation without benefit. There was no recurrence.—(*Practitioner*, Aug., 1895. from *Mon. f. prakt. Derm.*)

Urotropin is proposed by Nicolair as a solvent for uric acid. It is prepared by evaporating an ammoniacal solution of formaldehyde. It appears as colourless crystals, readily soluble in water, and its formula is $(CH_2)_6 N_4$; *i.e.*, it is hexamethylenetetramine.

Its solvent action upon uric acid is exhibited, not only in watery solutions, but also in the urine, and thus is superior to piperazin, lycetol, and lysidin. The drug quickly ($\frac{1}{4}$ hour) passes out of the system into the urine, in which it can be detected by bromine water, which throws down a yellow precipitate of urotropindibromide. It also possesses antiseptic and germicide properties. In two cases of cystitis, with ammoniacal urine, urotropin rendered the urine acid. Dose, 1-1$\frac{1}{2}$ grammes, given in water, and taken in the morning.—(*Ther. Monatsh.*, from *Deutsche Med. Woch.*, 1895.)

THERAPEUTICS OF IRON.

Ferratin, proposed by Schmiedeberg, is well spoken of by several observers, *e.g.*, von Ziemssen, Kündig, and Jaquet. Dose, 15 to 30 grains, thrice daily.

It not only induces a speedy increase in the number of blood corpuscles and of hæmoglobin (over 5 per cent. in eight days), but also leads to increase of weight and improvement in the general condition.—(*Ther. Monatsh.*, Aug., 1895.)

Hæmol and *Hæmogallol*, proposed by Kobert, have found supporters in Germany and America, viz., Ramm, Weiss, Porter, &c., but do not appear to have been tried in England.

Hæmalbumin, introduced by Dahmen, has been reported upon by Mörs, Dollken, Spiegelberg, and Schroers. But its superiority is not clearly demonstrated. Finsen (*Ugeskrift*

for Læge, No. 51, 1894) has succeeded in preparing a durable preparation from blood, consisting principally of dried albumins, holding a large amount of iron. It is a dark brown powder, odourless and almost tasteless. It is prepared from the blood of the ox or pig. The albumins are separated from the extractives and salts by means of Panum's method, somewhat simplified, and after many washings the uncoagulated albumins are centrifugalised and then evaporated at a low temperature (vacuum). At the preparation, measures are taken to destroy any micro-organisms that may be present. About one pound of hæmatin-albumin contains the albumins of about six pounds of blood. The remedy has been tried at several hospitals in Copenhagen with satisfactory results. It is well borne and easily assimilated. It does not cause constipation, but gives a reddish colour to the motions. The dose is 1 to 2 teaspoonfuls three times a day for adults. It may be taken either pure or mixed with cocoa.—(*Brit. Med. Jour., Epit.*, Feb. 2, 1895.)

ANTIPYRETICS AND ANTINEURALGICS.

Antipyrin.—There is little additional to report. In pruritus F. Arnstein (*Gazèta Lekarska*, No. 48, 1894, p. 1298), following Blaschko's recommendation (*Berlin. klin. Wochenschr.*, No. 22, 1891), has tried antipyrin internally (in powder, 1 gramme at bed time) in two severe cases, one of which was that of a woman, aged twenty-eight, with pruritus nervosus of three months' standing, while the other referred to a woman, aged sixty-six, with inveterate pruritus senilis. In both the itching quickly subsided, to disappear altogether in a couple of weeks. Both of the patients had been previously treated by various physicians and after various ordinary methods without obtaining any relief whatever.—(*Brit. Med. Journ., Epit.*, Feb. 23, 1895.)

As a hæmostatic, Roswell Park, of Buffalo (*American Medical News*), has found a 4 per cent. solution of antipyrin useful as a hæmostatic in checking general oozing from a bleeding surface, and also by experiments claims for it antiseptic properties which compare favourably with most of the anilin and coal tar derivatives. By experiments on animals he has shown that it can be used with safety on the peritoneum,

and he now employs it in general surgery. As a styptic it has the advantage of constricting the small vessels without causing any external clot, which may break down. In cases of epistaxis he has found it useful when sprayed into the nose. In this form of a spray to the nose he has found it useful in certain cases of inflammatory occlusion, and also for ordinary headaches, coryza, &c.

Apolysin and citrophen.—These are relatives of, and possible substitutes for phenacetin. As phenacetin is a combination of phenetidin and acetic acid, so apolysin and citrophen are combinations of phenetidin with citric acid. Apolysin is formed of one molecule of citric acid with one molecule of phenetidin, and citrophen of one molecule of citric acid with three molecules of phenetidin.

Apolysin is a white crystalline powder, with a sour taste, soluble in 55 parts of cold water, and very readily in warm water. Citrophen is a white crystalline powder, less soluble in water. Average dose of either, 0·5 to 1 gramme, up to 6 grammes in the day. Both act similarly to phenacetin as antipyretics and analgesics. (Benario and Seifert, *Deut. med. Woch.*, 1895.)

Saligenin is the radical of the glucoside salicin, and by oxidation is converted into salicylic acid. Until lately saligenin was costly, as it could be prepared only from salicin. It can now be made synthetically from carbolic acid and formaldehyde.

Senator is of the opinion that the action of salicin depends upon its conversion within the body more or less into salicylic acid, and Lederer now suggests that saligenin should be tried.

Accordingly, Walter has tested the drug in eight cases (seven of acute articular rheumatism, and one of gout). He found that it promptly relieved pain and swelling, and led to no unpleasant bye-effects.

Dose, 0·5 to 1 gramme, every hour or two, either in powder, or in dilute alcoholic solution. It is quite possible that saligenin acts as such, without invoking its conversion into salicylic acid.—(*Ther. Monats.*, Jan. and April, 1895, from *Münch. med. Woch.*).

Salophen continues to be employed by practitioners in various parts of the world. It is recommended by Lavrand

as being fully as valuable in rheumatism as salicylate of sodium, while it does not provoke the same headache, tinnitus aurium, or feeling of intoxication. It does not affect gastric digestion or give rise to nausea, as it does not decompose except in an alkaline medium (the intestine). The taste is insipid and not disagreeable. The average dose is 2 grammes (31 grains) daily, divided into four doses.—(*Practitioner*, 1895.)

Similar testimony is borne by Waters of New York. (*New York Med. Journ.*, May, 1895), and by Goldschläger (*Aerzt. Centr.-Anz.*)

Buck and Vanderlinden record ten instances of its anti-neuralgic and analgesic powers. No troublesome accessory symptoms attend its use.—(*Brit. Med. Journ., Epit.*, Jan. 19, 1895, from *La Flandre Méd.*).

Drews, of Hamburg, specially recommends salophen in children's diseases, and it is easily taken by young folk, either as a powder, or floated on water.—(*Brit, Med. Journ., Epit.*, Feb. 16, 1895, from *Allgem. med. Cent. Zeit.*, 1894.) More recently, Drews speaks highly of this drug in the treatment of the nervous form of influenza.—(*Centralbl. f. innere Med.*, 1895.)

CLINICAL SKETCHES.

The October issue of this illustrated periodical (published by Messrs. Smith, Elder & Co.) contains a reproduction of the well-known picture by Holbein, now in the Barber Surgeons' Hall, London, representing the union of the two guilds in 1540. It is accompanied by an interesting description, naming most of the portraits. The same number contains an obituary notice, with an excellent likeness, of the late Dr. Bristowe. The other contents are varied and interesting.

ORTHO-TOLYPYRIN. $C_{12}H_{14}N_2O$.

Dr. St. Von Muhlen, from a considerable experience with ortho-tolypyrin, concludes that it is more efficacious in articular rheumatism than the salicylates. It lowers the temperature in one to three hours, relieves pain, and produces no unpleasant effects. As an antipyretic and anti-rheumatismal remedy he considers it superior to antipyrin, and the salicylates. Dose, 10 to 15 grains.—*Les Nouveaux Remèdes*, No. 22

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

"THE DUBLIN INFECTIOUS HOSPITALS SCHEME."

We publish the following letters as a supplement to the discussion on the subject which was reported in the number of the Journal for December, 1895 (Vol. C., pages 486, 500, and 541).

"91 STEPHEN'S-GREEN, S.,
"DUBLIN, *January 9th*, 1896.

"DEAR DR. MOORE,

"I was out of town when you read your communication on 'Isolation Hospitals' at the Academy of Medicine. I notice you question therein a statement I made in the *Daily Express*, that the small-pox cases of London were treated some 14 miles down the Thames. The fact is, however, as I mentioned. I took care to have official information on the subject at the time, and I enclose a still later letter from the Clerk of the Metropolitan Asylums Board. You appear to conclude that there are only 350 beds available, but there are 800 others at Gore Farm adjoining the ships. I would be obliged if you would kindly notice this correction in the next number of the DUBLIN MEDICAL JOURNAL.

"Yours sincerely,
"ANTHONY ROCHE, M.R.C.P.I.

"John William Moore, Esq., M.D."

"THE METROPOLITAN ASYLUMS BOARD,
"NORFOLK HOUSE, NORFOLK-STREET,
"LONDON, W.C., *8th January*, 1896.

"DEAR SIR,

"In reply to your letter of the 6th inst., I have to inform you that you were right in supposing that nearly all cases of small-pox are taken right out of London for treatment. They are conveyed to ships, specially fitted up for the purpose, in the River Thames at Long Reach, some 15 miles down the river. On the land abreast the ships, and about a mile inland, is a hospital, to

which such patients are sent for convalescence after they have passed the acute stage.

"Two of the three ships were established in 1881, and the third in 1884. All cases are taken to the ships by ambulance steamers specially built for the purpose, and are conveyed to the wharves for transfer to the steamers by a special ambulance service, under the control of the managers.

"I forward herewith, as requested, copy of last Annual Report, and on page 34 you will find statistics of the small-pox patients treated by the managers from 1870 to the present time. You will notice that soon after the establishment of these ships, a very remarkable diminution in the number of patients occurred, and that the number has never since risen to the level frequently attained in former years. I should perhaps add that the maintenance of these ships is very expensive, and when those now in use are beyond further repair they will not, I think, be replaced. Indeed the managers have already passed plans for the erection, on the shore, of a hospital for acute cases.

"Yours faithfully,

"T. Duncombe Mann,

"Clerk to the Board.

"Dr. A. Roche,
91 St. Stephen's-green, S., Dublin."

"General Register Office,
"Somerset House, 4*th January*, 1896.

"Sir,

"I am directed by the Registrar-General to say, in reply to your letter of the 9th inst., that although the bulk of the London small-pox cases have for some years past been treated in the hospital ships or at the Gore Farm estate, nevertheless they have not all been sent there, even as lately as the year 1895.

"For example, taking two of the dates mentioned in your letter—namely, the weeks ending 17th August and 24th August, 1895, there were under treatment 9 small-pox patients and 11 respectively, either at the Highgate Small-pox Hospital or at the South Wharf Shelter, both of which institutions are within Registration London.

"I am, Sir,

"Your obedient Servant,

"John Tatham,

"*Statistical Superintendent.*

"John William Moore, Esq., M.D., B.A., &c.,
"40 Fitzwilliam-square, West, Dublin."

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—James Little, M.D., F.R.C.P.I.

General Secretary—William Thomson, F.R.C.S.I.

SECTION OF SURGERY.

President—Sir Thornley Stoker, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—Kendal Franks, F.R.C.S.I.

Friday, May 24, 1895.

The President in the Chair.

Carcinoma of Larynx.

In reference to a case exhibited by Dr. Woods of a man from whom the right half of the larynx was excised for carcinoma,

Mr. Wheeler asked whether the full extent of the disease was diagnosticated before the operation. He also wished to know whether he had any difficulty in feeding the patient after the operation, and whether there was any difficulty in severing the thyroid cartilage.

Mr. Woods said that nothing was found after the operation that was not recognised before. He had torn away a portion of the growth, which Dr. Earl examined, and said it was a carcinoma. At the conclusion of the operation a stomach tube was passed in through the mesial wound, and carried to the stomach. It was stitched to the skin to prevent it slipping. On the third day, as the tube irritated the stomach, it was withdrawn. There was no difficulty in introducing it again. The patient was fed with it till the 28th day, when he found he could do without it. He is able to swallow bread and milk, but still has difficulty in swallowing fluids alone. The hypoglossal nerve on the right side was injured. The great cornu of the hyoid bone had to be removed, as it was implicated in the growth. The thyroid cartilage was to a certain extent calcified, but he had no difficulty in dividing it with strong scissors.

The President said that although at the time he advised against the operation on account of the extent of the disease, the result showed that Mr. Woods was fully justified in operating.

Injuries involving the Articulations of the Metacarpal Bone of the Thumb.

Dr. E. H. Bennett read a paper on this subject. [It will be found in Vol. C., page 473.]

The President said the paper was exhaustive, and, to a very great extent, original. The only specimen which one could question was the one in which the hand was deformed by rheumatic arthritis. From the picture the question might be raised as to how far it was not part of the general deformity affecting the articulations of the hand.

Mr. Myles had met with only one case of Hey's dislocation in the living. After some trouble he had reduced it by exaggerating the deformity, the patient being under chloroform. He did not comprehend how the sesamoid bones got between the head of the metacarpal and the base of the phalanx, with their articular surfaces turned towards the latter.

Mr. Croly would like to have heard of methods for reducing dislocations. He had seen a dislocation forwards, the reverse of Hey's, and had reduced it with great facility. The last two dislocations of the thumb that he got he put the patient under chloroform, and having failed after trying many methods, he manipulated the thumb, turning it round, and the thumb suddenly reduced. He believed all the dislocations were reduced by taking the muscles unawares. He did not think the division of the tendons of the flexor muscles of the thumb or opening into the joint was justifiable surgery.

Mr. Barton said that when he was Resident Surgeon a young boy came to him with an ordinary Hey's dislocation. He tried to reduce it by putting the hand over the corner of the table, and shoving the phalanx forwards. He got it in by increasing the deformity, but knocked off the epiphysis. He never heard of this accident occurring before.

Mr. Woods said that he saw a man at the Richmond Hospital. He had fallen on his thumb, and had a dislocation the reverse of Hey's. He saw him within an hour after the accident. He had the man anæsthetised, and tried manipulation of every kind for half an hour. With the assistance of four others, he then used brute force, but was unable to reduce it. The man went out and came back in thirty days. He took a cast of his hand, a photograph of which Mr. Bennett had shown. On looking up the pathological reports of the Museum of Trinity College, he found Mr. Smith had related a smilar case which he had failed to reduce after repeated trials. Nélaton had also recorded another.

Mr. Heuston said that within the past six months he had had an interesting case. A midshipman on a voyage to South America fell from the mast, and got a compound dislocation of the carpo-metacarpal joint of the thumb. It was not reduced. On coming back in three months, he went to the Edinburgh Infirmary, where he believed he got it reduced. He saw him two months later, when the dislocation was still present. He dissected down on the articulation, from the internal aspect, and found that the sesamoid bones had got between the two parts. He dissected them out, and was then able to reduce the dislocation. It got all right. He did not see which way the articular surface of the sesamoid bones was turned.

Mr. Lentaigne had met with four cases of dislocation, which all reduced without difficulty under anæsthesia. He did not agree with Mr. Croly that dissection operations should not be performed under any circumstances. If he got a case which he could not reduce, and if the patient would allow him, he would operate, and not leave the case permanently dislocated. Mr. Heuston's remarks bore out his ideas.

Mr. Bennett, replying, said that in the complex dislocation there was a point that required explanation. If the phalanx was pulled away from the metacarpal bone, the fibres of the short flexor, attached to the sesamoid bones, were stretched, and so the articular surface of the sesamoid bones was turned towards the phalanx.

Herniotomy and Taxis.

Mr. Henry Gray Croly read a paper on this subject. [It will be found in Vol. C., pages 1 and 97.]

Mr. Wheeler agreed with Mr. Croly that taxis was often abused. He thought the words "traction and compression" described the manipulation of returning a hernia better than the word "taxis." In his practice he had given up giving an anæsthetic before performing taxis. It only rendered the patient insensible. He did not use any kind of opium. The earlier the operation was performed the better was the chance of recovery.

Mr. F. Nixon said that he agreed with Mr. Croly as regards the constricting bands formed by the superficial expansion of the falciform process described by Mr. Colles. Gimbernat's ligament only infrequently caused constriction. Hey's ligament was a much more common cause. He thought the division of Poupart's ligament objectionable, as it weakened the abdominal parietes, and there was also danger of wounding the spermatic cord. In many cases of hernia, the opening of a pair of forceps will often

stretch the constricting bands. He did not agree with Mr. Wheeler about not using an anæsthetic, as it produced muscular relaxation, and greatly facilitated the return of the hernia.

Mr. Croly, replying, said that he had done close on 150 operations for strangulated hernia, and never had any hæmorrhage resulting. He considered inversion of the patient in a case of strangulated hernia a very dangerous practice.

The Section then adjourned.

CROWDING IN CITIES.

The New York *Sun* contains some census comparisons that are of interest to medical readers, showing how the people of certain large cities in this country and Europe are housed. New York has 115,000 houses, averaging 18 residents to each. London, the greatest accumulation of inhabitants in the world, has 600,000 houses, with 7 residents in each on the average. London has increased in this respect very rapidly, for at the beginning of the present century the number of houses was only 130,000, little more than New York has at the present time. The population of London at that time was 960,000. It is now 4,200,000. So it has increased nearly fivefold, but the number of houses has not increased in as large a ratio. Paris has 90,000 houses. At the close of the Franco-Prussian war it had 70,000. At the close of the Napoleonic wars it had 28,000. The area of the city has been extended meanwhile. The average number of residents in a house in Paris is 25, which is about 50 per cent. greater than in New York. In all computations of city population by houses, Philadelphia ranks as a shining example of a big town which has plenty of "elbow-room" to expand in. Philadelphia, with a population in excess of 1,000,000, has 137,000 houses. It is less densely populated than London, but not much less so.—*Jour. Am. Med. Ass.*

SKIN GRAFTING.

At the annual meeting of the New York State Medical Association, held in October last, Dr. Zera J. Lusk described his method of grafting the dry epidermis hanging from the skin after a burn. The method could be carried out on any occasion by raising the epidermis through the application of a blister. The epidermis, when dry, was cleansed and moistened, a piece an inch square was cut into perhaps twelve pieces and applied on the wound. Little islands were formed which spread and covered the entire surface.—*Med. Rec.*

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.;
F.R.C.P.I.; F. R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, December 28, 1895.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Dec. 7.	Dec. 14.	Dec. 21.	Dec. 28.		Dec. 7.	Dec. 14.	Dec. 21.	Dec. 28.
Armagh -	14·0	21·0	14·0	7·0	Limerick -	14·0	12·6	12·6	7·0
Belfast -	24·2	23·1	26·9	25·2	Lisburn -	25·7	8·5	8·5	17·0
Cork -	20·1	22·8	24·9	17·3	Londonderry	22·0	25·1	18·8	6·3
Drogheda -	4·4	26·4	22·0	13·2	Lurgan -	22·8	13·7	18·2	13·7
Dublin -	19·4	21·9	23·9	22·7	Newry -	32·2	36·2	12·1	12·1
Dundalk -	29·3	4·2	8·4	16·8	Sligo -	20·3	30·5	20·3	20·3
Galway -	18·9	41·5	15·1	11·3	Waterford -	20·0	20·0	17·5	37·5
Kilkenny -	51·9	9·4	4·7	18·9	Wexford -	18·1	27·1	36·1	9·0

In the week ending Saturday, December 7, 1895, the mortality in thirty-three large English towns, including London (in which the rate was 17·3), was equal to an average annual death-rate of 17·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·5 per 1,000. In Glasgow the rate was 19·2. In Edinburgh it was 16·2.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 21·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen

districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in nine of the districts to 5·0 in Waterford—the 8 deaths from all causes registered in that district comprising 2 from diarrhœa. Among the 127 deaths from all causes registered in Belfast are 3 from measles, 3 from scarlatina, 2 from whooping-cough, 5 from enteric fever, and 3 from diarrhœa.

In the Dublin Registration District the registered births amounted to 184—100 boys and 84 girls; and the registered deaths to 135—81 males and 54 females.

The deaths, which are 62 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 20·1 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 19·4 per 1,000. During the first forty-nine weeks of 1895 the death-rate averaged 28·2, and was 1·2 over the mean rate in the corresponding period of the ten years, 1885–1894.

Only 11 deaths from zymotic diseases were registered—the average number for the forty-ninth week of the last ten years was 24. The 11 deaths comprise 1 from small-pox (that of a boy, aged 8 years, who had been vaccinated), 4 from influenza and its complications, 2 from whooping-cough, 1 from enteric fever, and 2 from diarrhœa.

Five cases of small-pox were admitted to hospital, against 2 admissions in the preceding week and 3 in that ended November 23. One small-pox patient died, and 13 remained under treatment on Saturday, being 4 over the number in hospital at the close of the preceding week.

Seventeen cases of enteric fever were admitted to hospital, being 7 over the admissions in the preceding week and 8 over the number in the week ended November 23. Sixteen patients were discharged, 1 patient died, and 71 remained under treatment on Saturday, being equal to the number in hospital on that day week.

The weekly number of cases of scarlatina admitted to hospital, which had risen from 15 for the week ended November 23 to 25 for the following week, fell to 15: 23 patients were discharged, and 83 remained under treatment on Saturday, being 8 under the number in hospital on that day week.

The number of deaths from diseases of the respiratory system registered was 31, being 17 below the average for the corresponding week of the last ten years, and 11 under the number for the previous week. The 31 deaths comprise 13 from bronchitis and 13 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 14, the mortality in thirty-three large English towns, including London (in which the rate was 17·5), was equal to an average annual death-rate of 17·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·9 per 1,000. In Glasgow the rate was 19·1, and in Edinburgh it was 15·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in ten of the districts to 6·3 in Londonderry—the 16 deaths from all causes registered in that district comprising 1 from whooping-cough, 1 from diphtheria, and 2 from diarrhœa. Among the 121 deaths from all causes registered in Belfast are 2 from measles, 2 from scarlatina, 2 from whooping-cough, 1 from diphtheria, 5 from enteric fever, and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 173—100 boys and 73 girls; and the registered deaths to 153—74 males and 79 females.

The deaths which are 50 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·8 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 21·9 per 1,000. During the first fifty weeks of 1895 the death-rate averaged 28·1, and was 1·0 over the mean rate in the corresponding period of the ten years 1885–1894.

Only 10 deaths from zymotic diseases were registered, being 1 under the low number for each of the two weeks preceding, and 13 below the average for the fiftieth week of the last ten years. They consist of 1 from influenza, 1 from whooping-cough, 1 from diphtheria, 1 from ill-defined fever, 2 from enteric fever, 3 from diarrhœa, and 1 from cerebro-spinal meningitis.

The weekly number of cases of small-pox admitted to hospital, which had risen from 2 in the week ended November 30 to 5 in the following week, fell to 1. One small-pox patient was discharged, and 13 remained under treatment on Saturday, being equal to the number in hospital at the close of the preceding week.

The number of cases of enteric fever admitted to hospital was 12, being 5 under the admissions in the preceding week and 2 over the number in the week ended November 30. Thirteen patients were discharged, 2 died, and 68 remained under treatment on Saturday, being 3 under the number in hospital on that day week.

The admissions to hospital of cases of scarlatina have fluctuated considerably for some weeks past. The number for the week under review is 21, being 6 over the admissions for the preceding week, but 4 under the number for the week ended November 30. Ten patients were discharged, and 94 remained under treatment on Saturday, being 11 over the number in hospital at the close of the preceding week.

The deaths from diseases of the respiratory system, which had fallen from 42 in the week ended November 30 to 31 in the following week, were 33, but this number is 22 below the average for the corresponding week of the last ten years. The 33 deaths comprise 16 from bronchitis and 14 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 21, the mortality in thirty-three large English towns, including London (in which the rate was 18·1), was equal to an average annual death-rate of 18·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·2 per 1,000. In Glasgow the rate was 19·7, and in Edinburgh it was 17·5.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 23·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in nine of the districts to 7·5 in Waterford—the 7 deaths from all causes registered in that district comprising 3 from diarrhœa. Among the 141 deaths from all causes registered in Belfast are 6 from measles, 6 from scarlatina, 2 from whooping-cough, 1 from simple continued fever, 6 from enteric fever, and 4 from diarrhœa. The 36 deaths in Cork comprise 1 from scarlatina and 1 from enteric fever.

In the Dublin Registration District the registered births amounted to 167—93 boys and 74 girls; and the registered deaths to 168—84 males and 84 females.

The deaths, which are 25 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·1 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 23·9 per 1,000. During the first fifty-one weeks of 1895 the death-rate averaged 28·0, and was 0·9 over the mean rate in the corresponding period of the ten years, 1885–1894.

The number of deaths from zymotic diseases registered was 14, being 4 over the low number registered in the preceding week, but 10 under the average for the fifty-first week of the last ten years. The 14 deaths comprise 1 from scarlet fever (scarlatina), 2 from influenza and its complications, 1 from whooping-cough, 1 from diphtheria, 3 from enteric fever, 1 from diarrhœa, 1 from dysentery, and 2 from erysipelas.

Two cases of small-pox were admitted to hospital, against 1 admission in the preceding week and 5 in the week ended December 7. One small-pox patient was discharged, 1 died, and 13 remained under treatment on Saturday, being equal to the number in hospital at the close of the preceding week.

Thirteen cases of enteric fever were admitted to hospital, being 1 over the admissions in the preceding week, but 4 under the number admitted in the week ended December 7. Nine patients were discharged, 2 died, and 70 remained under treatment on Saturday, being 2 over the number in hospital on the previous Saturday.

The number of cases of scarlatina admitted to hospital was 17, being 4 under the admissions in the preceding week, and 2 over the number admitted in the first week of the month. Twelve patients were discharged, 1 died, and 98 remained under treatment on Saturday, being 4 over the number in hospital on that day week.

Diseases of the respiratory system caused 40 deaths, being 7 over the number for the preceding week, but 3 under the average for the fifty-first week of the last ten years. The 40 deaths comprise 25 from bronchitis and 11 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 28, the mortality in thirty-three large English towns, including London (in which the rate was 17·8), was equal to an average annual death-rate of 19·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·0 per 1,000. In Glasgow the rate was 21·0, and in Edinburgh it was 16·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 21·0 per 1,000 of the population.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 1·3 per 1,000, the rates varying from 0·0 in eleven of the districts to 4·7 in Kilkenny—the 4 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 132 deaths from all causes registered in Belfast are 2 from measles, 4 from scarlatina,

4 from whooping-cough, 3 from diphtheria, 3 from enteric fever, and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 95—57 boys and 38 girls; and the registered deaths to 156—83 males and 73 females.

The deaths, which are 66 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·3 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 22·7 per 1,000. During the fifty-two weeks ending with Saturday, December 28, the death-rate averaged 27·9, and was 0·7 over the mean annual rate in the ten years, 1885–1894.

Only 5 deaths from zymotic diseases were registered, being 9 under the number for the preceding week, and 22 below the average for the fifty-second week of the last ten years. They consist of 1 from small-pox (that of a man aged 59 years: no vaccination marks visible), 2 from influenza and its complications, 1 from diphtheria, and 1 from enteric fever.

The hospital admissions did not include any case of small-pox. During the preceding week 2 cases of the disease had been admitted. Two small-pox patients were discharged and 11 remained under treatment on Saturday, being 2 under the number in hospital on that day week.

The number of cases of enteric fever admitted to hospital was 9, being a decline of 4 as compared with the admissions in the preceding week: 14 patients were discharged and 65 remained under treatment on Saturday, being 5 under the number in hospital on the previous Saturday.

Twenty-eight cases of scarlatina were admitted to hospital, against 17 in the preceding week: 14 patients were discharged and 112 remained under treatment on Saturday, being 14 over the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered was 40, being equal to the number for the preceding week, but 16 below the average for the fifty-second week of the ten years 1885–1894. The 40 deaths comprise 27 from bronchitis and 11 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat 53° 20′ *N., Long.* 6° 15′ *W., for the Month of December*, 1895.

Mean Height of Barometer,	29·723 inches.
Maximal Height of Barometer (on 27th, at 9 p.m.),	30·290 „
Minimal Height of Barometer (on 15th, at 9 p.m.),	28·844 „
Mean Dry-bulb Temperature,	41·0°.
Mean Wet-bulb Temperature,	39·6°.
Mean Dew-point Temperature,	37·7°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·228 inch.
Mean Humidity,	88·3 per cent.
Highest Temperature in Shade (on 30th),	56·0°.
Lowest Temperature in Shade (on 21st),	25·3°.
Lowest Temperature on Grass (Radiation) (on 8th),	24·0°.
Mean Amount of Cloud,	66·8 per cent.
Rainfall (on 27 days),	3·944 inches.
Greatest Daily Rainfall (on 24th),	·855 inch.
General Directions of Wind,	W., S.E.

Remarks.

A gloomy, wet, stormy, and generally inclement month. Fog also was often observed—the cold vapour fog of the 21st being especially noteworthy. Christmas week is memorable for a long continued south-easterly gale in Ireland, and downpours of rain in the south-east and south—at Roche's Point the rainfall measurement was 7 inches in the seven days ending 8 a.m. of Saturday, the 28th. A remarkable wave of warmth was passing over the extreme west of Europe at the close of the month.

In Dublin the arithmetical mean temperature (41·6°) was slightly above the average (41·3°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 41·0°. In the thirty years ending with 1894, December was coldest in 1878 (M. T. = 32·8°), and in 1874 (M. T. =36·8°), and warmest in 1865 (M. T. = 46·2°). In 1886, the M. T. was as low as 37·9°; in the year 1879 (the "cold year") it was also 37·9°. In 1887, the M.T. was 39·9°; in 1888, 43·6°; in 1889, 43·8°; in 1890, 39·2°; in 1891, 43·0°; in 1892, 39·6°; in 1893, 43·5°; and in 1894, 43·9°.

The mean height of the barometer was 29·723 inches, or 0·152 inch below the corrected average value for December—namely, 29·875 inches. The mercury rose to 30·290 inches at 9 p.m. of

the 27th, and fell to 28·844 inches at 9 p.m. of the 15th. The observed range of atmospheric pressure was, therefore, 1·446 inches—that is, a little less than one inch and a half.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 41·0°, or 5·1° below the value for November, and 3·7° below that for October, 1895. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*min.* × ·52), the value was 41·8°, or 0·3° above the average mean temperature for December, calculated in the same way, in the twenty-five years, 1865-89, inclusive (41·5°). The arithmetical mean of the maximal and minimal readings was 41·6°, compared with a twenty-five years' average of 41·3°. On the 30th the thermometer in the screen rose to 56·0°—wind, W.; on the 21st the temperature fell to 25·3°—wind, S.E. The minimum on the grass was 24·0° on the 8th. There were only 4 days of frost in the screen, and 10 days of frost on the grass.

The rainfall was 3·944 inches, distributed over as many as 27 days. The average rainfall for December in the twenty-five years, 1865–89, was 2·404 inches, and the average number of rainy days was 16·9. Both rainfall, therefore, and rainy days were considerably above the average. In 1876 the rainfall in December was very large—7·566 inches on 22 days. In 1872, 4·932 inches fell on as many as 24 days; and in 1868 (which was otherwise a fine and dry year), 4·749 inches fell on as many as 27 days. On the other hand, in 1867, only ·771 inch was measured on 13 days; and in 1871, only ·797 inch on 15 days. In 1885, only ·742 inch of rain was measured on but 10 days; but in 1886 the rainfall was 3·348 inches on 21 days. In 1887 (the "dry year,") the rainfall was 1·223 inches on 19 days; in 1888, 2·911 inches on 17 days; in 1889, 1·554 inches on 15 days; in 1890, 1·856 inches on 11 days; in 1891, 3·299 inches on 21 days; in 1892, only ·795 inch on 10 days; in 1893, 2·482 inches on 19 days, and in 1894, 1·511 inches on 18 days.

Lunar halos appeared on the 30th and 31st; a solar halo on the 31st. High winds were noted on 15 days, and attained the force of a gale on 7 occasions—the 4th, 5th, 12th, 15th, 22nd, 24th, and 25th. The atmosphere was more or less foggy in Dublin on the 8th, 10th, 11th, 17th, 19th, 20th, 21st, 27th, 29th and 31st. Snow or sleet fell in Dublin on the 6th, 7th, 12th, 13th, 15th, 24th, 25th and 26th. Hail fell on the 3rd, 8th and 12th. Thunder was heard on the 12th. Lightning occurred on the 15th. Faint aurora was seen on the 7th.

The most striking episode of the week ended Saturday the 7th,

was the passage across North-western and Northern Europe, in the interval between Wednesday and Saturday, of an atmospheric depression, near the centre of which the barometer fell to 28 inches or less, at a time when pressure exceeded 30·40 inches over the Peninsula. The first three days were changeable, but generally favourable, with open weather and southwesterly or westerly winds. The barometer was low off the N. of Scotland and to the westward of Norway—29·50 inches on Sunday and Monday, 29 inches on Tuesday and Wednesday. During this time the barometer stood above 30 inches over France and Germany and was gradually rising in that region. Hence gradients became very steep over the British Isles and North Sea. On Wednesday a still further reduction of pressure took place over the Norwegian Sea, and at 8 a.m. of Thursday the barometer read only 28·34 inches at Christiansund in Norway, whereas it stood as high as 30·43 inches at Biarritz and Lisbon, and 30·48 inches at Ponta Delgada in the Azores. On Friday morning the reading at Madrid was 30·50 inches. Violent westerly gales raged over the North of France, Germany, the British Isles and Scandinavia. Temperature rose in the S.—to 56° at Roche's Point, in London, and at the North Foreland, and to 58° at Cambridge; it fell fast in the N., and squalls of hail and snow, with thunder and lightning, swept over Scotland. A snow storm of much intensity subsequently extended to Ireland and England accompanied by lightning at many stations. On Thursday evening the barometer was down to 28 inches at Christiansund. In Dublin the mean atmospheric pressure was 29·801 inches, the range being from 29·486 inches at 9 a.m. of Friday (wind, W.) to 30·046 inches at 9 p.m. of Saturday (wind, W.N.W.). The corrected mean temperature was 44·4°. On Thursday the screened thermometers rose to 54·5°; on Saturday they fell to 31·0°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 43·0°. Rain fell on five days to the amount of ·363 inch, ·196 inch being measured on Friday. The greater part of this precipitation took place in the form of snow. The prevailing wind was W.

Cyclonic conditions persisted throughout the week ended Saturday, the 14th, and the weather was of a very unsettled, changeable type—the alternations in pressure and temperature being sudden and extreme. Rain or sleet and snow fell almost daily in varying quantities, and thunder and lightning occurred in several parts of the United Kingdom in the course of Thursday. The week began with a frost prevailing in the rear of the great atmospheric depression of the closing period of the previous week. In and about Dublin the ground was covered with snow on Sunday, but a

rapid thaw set in as the day advanced, and by Monday morning the air was quite mild, with a new depression central off the North of Scotland. In Dublin the thermometer stood 16 degrees higher at 9 a.m. of Monday than at 9 a.m. of Sunday. Tuesday was cold but fair. At night temperature rose again in Ireland, but sharp frost occurred in England, the thermometer sinking to 25° in the screen at both Oxford and Cambridge. Wednesday was a fine day, but at night the barometer fell fast, as a deep depression reached the North of Ireland and West of Scotland. This disturbance caused S.W. to N.W. gales, heavy rainfalls followed by showers of hail and sleet or snow. It was accompanied by thunder and lightning in some instances. In Dublin thunder was heard at 10 15 a.m. of Thursday. Friday was fine after some light snow showers, but at night the barometer again fell, and temperature rose so that the thermometer stood 15·3° higher at 9 a.m. of Saturday than at 9 a.m. of Friday. The mean atmospheric pressure was, in Dublin, 29·760 inches, the barometer ranging from 30·135 inches at 9 a.m. of Sunday (wind, W.) to 29·166 inches about noon of Thursday (wind, W.S.W.). The corrected mean temperature was 40·4°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 40·1°. On Sunday the screened thermometers fell to 29·9°; on Saturday they rose to 55·0°. Rainfall amounted to ·476 inch on six days, ·277 inch being measured on Thursday. The prevailing wind was westerly.

During the week ended Saturday, the 21st, the weather was changeable and cold—more steadily cold than in past weeks; but as uncertain as before with regard to atmospheric pressure, direction of the wind, and amount of cloud. On Sunday a large and deep depression was central over Ulster, Connaught, Leinster and the Irish Sea, in which regions the barometer was below 29 inches. Temperature had risen fast in England, but fallen equally quickly in Ireland. At 8 a.m. the thermometer read 51° in London and at Cambridge; at 9 a.m. it stood at 38° in Dublin, where cold rain was soon followed by sleet and snow. Lightning was seen at night. At this time a high-pressure area (anticyclone) began to spread south-westwards over the North Sea and British Isles from the Baltic and Scandinavia, the result being that easterly and south-easterly winds set in on Tuesday, accompanied by fine, dry spells. In Dublin, however, showers fell on Tuesday evening and during Wednesday night, while Thursday proved gloomy and damp in the extreme at a time when a clear sky and sharp frost prevailed inland and in the S.W. of Ireland. At 8 a.m. of Thursday the thermometer was as low as 30° at Valentia Island and 28° at

Parsonstown, the minima at these stations having been 27° and 26° respectively. On Friday an anticyclone of little intensity lay over Ireland, Scotland, and Wales. The air fell calm and a remarkable reduction of temperature occurred in Dublin, attended by a dense vapour fog—by 2 p.m. the thermometer in the screen had sunk below 32° and during the following night a minimum of 25·3° was recorded. At Parsonstown the minimum was 21°. On Saturday a S.E. wind, connected with a new depression in the far S. and S.W., caused a rise of temperature in this neighbourhood. In Dublin the mean atmospheric pressure was 29·588 inches, the lowest being 28·844 inches at 9 p.m. of Sunday (wind, W.S.W.); the highest, 30·059 inches at 9 a.m. of Friday (wind, W.N.W.). The corrected mean temperature was 38·0°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 37·1°. On Sunday the screened thermometers rose to 44·9°; on Saturday they fell to 25·3°. Westerly and easterly winds prevailed alternately. The rainfall was ·538 inch on six days, ·196 inch being recorded on Sunday, and ·181 inch on Saturday.

Weather of the most inclement description was experienced during the week ended Saturday, the 28th, in the S., S.E., and E. of Ireland. Day after day was gloomy, stormy, wet and cold, and only on Saturday, when the wind at length veered from E. and S.E. to S.W., did more genial conditions prevail. In Dublin the sun remained invisible until Saturday forenoon, when it shone brightly for a few short intervals with the coming of the S.W. wind. The cause of the bad weather was the persistence of an area of high atmospheric pressure (anticyclone) over the Scandinavian Peninsula and the northern half of the North Sea, while a very large and deep depression swayed backwards and forwards off the extreme S.W. of Ireland. This distribution of pressure caused very steep gradients for S.E. winds, particularly in Ireland. Temperature was low except along the W. coast of France, over Cornwall and in the S. and S.W. of Ireland, the result being that large quantities of rain fell along the line of commingling warm and cold air-currents, while the wind blew a fresh to whole gale from S.E. and E. in the same districts. At Roche's Point, Cork Harbour, the daily rainfalls up to 8 a.m. on Saturday were—1·25 inches, 1·40 inches, 1·80 inches, 0·80 inch, 1·20 inches, 0·10 inch, and 0·45 inch—in all, 7·00 inches. The gales were most severely felt in the E. and S.E. of Ireland, where the coasts were strewed with wrecks and a lamentable loss of life occurred on Christmas Eve. In Dublin the mean height of the barometer was 29·723 inches, pressure ranging between 29·295 inches at 3 p.m. of

Tuesday (wind, E.S.E.), and 30·290 inches at 9 p.m. of Friday (wind, S.E.). The corrected mean temperature was 40·9°. The mean dry bulb reading at 9 a.m. and 9 p.m. being 40·5.° On both Thursday and Friday the thermometer sank to 36·0° in the screen; on Saturday it rose to 53·8°. Rain or sleet fell daily to the amount of 2·366 inches, ·618 inch being registered on Sunday, ·444 inch on Monday, and ·855 inch on Tuesday. The prevalent wind was S.E.

The last three days of the month and of the year 1895 were singularly mild, but very changeable, cloudy and showery or rainy. On Monday, the 30th, the thermometer rose to 56·0° in the screen—the highest reading for the month. Lunar halos were seen on the 30th and 31st; a solar halo appeared on the 31st.

The rainfall in Dublin during 1895 amounted to 31·242 inches on 194 days, compared with 29·261 inches on 209 days in 1894, only 20·493 inches on 174 days in 1893, 25·644 inches on 196 days in 1892, 27·820 inches on 184 days in 1891, 27·562 inches on 200 days in 1890, 27·272 inches on 193 days in 1889, 28·679 inches on 190 days in 1888, 16·601 inches on 160 days in 1887, and a twenty-five years' average of 27·696 inches on 194·3 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in December, 1895, was 3·420 inches distributed over 23 days. Of this quantity ·450 inch fell on the 25th, and ·360 inch on the 24th. From January 1st to December 31st, 1895, rain fell at Knockdolian on 174 days, and to the total amount of 35·135 inches. The corresponding figures for 1893 were 22·526 inches on 170 days, and for 1894, 38·776 inches on 184 days.

The rainfall at Cloneevin, Killiney, Co. Dublin, during December, 1895, was 4·19 inches on 27 days, compared with a ten years' average (1885–94) of 2·066 inches on 14·7 days. It was the wettest December of eleven years; 1888 comes next, with 3·87 inches on 20 days. The maximum fall in 24 hours was ·96 inch on the 22nd. Mr. Robert O'Brien Furlong, M.A., Univ. Dub., reports that the total fall for 1895 at Cloneevin was 32·85 inches on 190 days. This was 7·364 inches in excess of the ten years' average—viz., 25·486 inches, and is the highest recorded for ten years—1885–94. The next highest annual fall was 32·64 inches in 1894, on 196 days.

In 1895 rain (including snow on 14 days) fell on 190 days, the average being 176·7 days.

Rainfall in 1895,

At 40 Fitzwilliam-square, West, Dublin.

Rain Gauge:—Diameter of funnel, 8 in. Height of top—Above ground, 1 ft. 4 in.; above sea level, 50 ft.

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which ·01 or more fell
	Inches	Depth	Date	
January, - - -	5·711	1·802	12th	24
February, - - -	·625	·310	6th	9
March - - -	2·748	·569	27th	19
April, - - -	1·149	·252	26th	13
May, - - -	·177	·070	31st	3
June, - - -	1·872	·641	30th	12
July, - - -	4·503	1·256	25th	16
August, - - -	3·548	·700	10th	27
September, - - -	·543	·184	4th	7
October, - - -	2·840	·590	1st	16
November, - - -	3·582	·890	15th	21
December, - - -	3·944	·855	24th	27
Total, - -	31·242	—	—	194

The rainfall was 3·546 inches in excess of the average annual measurement of the twenty-five years, 1865–89, inclusive—viz., 27·696 inches.

It will be remembered that the rainfall in 1887 was very exceptionally small—16·601 inches, the only approach to this measurement in Dublin being in 1870, when only 20·859 inches fell, in 1884, when the measurement was 20·467 inches, and in 1893 with its rainfall of 20·493 inches. In seven of the twenty-five years in question the rainfall was less than 26 inches, and in 1885 it was 26·614 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32·966 inches, or as nearly as possible double the fall of 1887—fell on 220 days. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1886—namely, in 1872, when 35·566 inches fell on 238 days, and in 1880, when 34·512 inches were measured on, however, only 188 days.

In 1895 there were 194 rainy days, or days upon which not less than ·005 inch of rain (five-thousands of an inch) was measured. This was almost exactly equal to the average number of rainy days, which was 194·3 in the twenty-five years, 1865–89, inclusive. In 1868 and 1887—the warm dry years of recent times—the rainy days were only 160, and in 1870 they were only 145. In 1868, however, the rainfall amounted to 24·935 inches, or more than 8

inches above the measurement in 1887, and even in 1870, 20·859 inches were recorded.

The rainfall in 24 hours from 9 a.m. to 9 a.m. exceeded one inch on two occasions in 1892—viz., May 28th (2·056 inches) and August 16th (1·310 inches). On no occasion in 1893 did one inch of rain fall on a given day in Dublin. In 1894 falls of upwards of an inch of rain in 24 hours were recorded on four occasions, viz., May 15th (1·330 inches); July 24th (1·560 inches); August 25th (1·369 inches); and October 23rd (1·042 inches. In 1895, 1·802 inches fell on January 12th; 1·014 inches on July 24th; and 1·256 on July 25th.

Included in the 194 rainy days in 1895 are 38 on which snow or sleet fell, and 40 on which there was hail. In January hail was observed on 10 days, in February and also in March on 6 days, in April on 2 days, in May, July and November on 1 day, in June on 2 days, in October on 8 days, and on 3 days in December. Snow or sleet fell on 13 days in January, on 7 days in February, on 4 days in March, on 1 day in April and also in May, on 3 days in October, on 1 day in November, and on 8 days in December. Thunder occurred on 10 occasions during the year—twice in May, three times in June, twice in July, and once in August, October, and December. Lightning was also seen on three occasions in October, and once in January, March, August, September, and December.

The rainfall in the first six months was 12·282 inches on 80 days. The rainfall exceeded 3 inches in January (5·711), July (4·503), August (3·548), November (3·582), and December (3·944). In May it was only ·177 inch on 3 days.

Aurora borealis was observed on four occasions—namely, on March 13th, April 11th, May 2nd, and December 7th. More or less fog prevailed on 52 occasions—5 in January, 6 in February, 6 in March, 2 in May, 1 in August, 9 in September, 7 in October, 6 in November, and 10 in December. High winds were noted on 124 days—13 in January, 15 in February, 13 in March, 9 in April, 3 in May, 4 in June, 13 in July, 8 in August, 7 in September, 9 in October, 15 in November, and 15 in December. The high winds amounted to gales (force 7 or upwards according to the Beaufort scale) on 34 occasions—4 in January, 7 in February, 3 in March, 1 in May, 2 in July, 2 in September, 2 in October, 7 in November, and 7 in December.

The rainfall was distributed as follows:—9·084 inches fell on 52 days in the first quarter, 3·198 inches on 28 days in the second 8·594 inches on 50 days in the third, 10·366 inches on 64 days in the fourth and last quarter.

Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam-square, West) during the Year 1895.

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Daily Min	Rainfall	Rainy Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevalent Winds
	°		°		°	°	Ins.		Ins.	Ins.		Ins.		
January -	44·8	22nd	16·9	9th	39·6	31·2	5·711	24	29·760	30·630	30th	28·733	14th	W., N.W., N.E.
February -	48·6	28th	19·0	7th	38·4	29·9	·625	9	30·111	30·548	16th	29·576	6th	E., S.E.
March - -	58·7	16th	29·5	13th	49·3	38·9	2·748	19	29·683	30·315	17th	28·632	28th	W., S.W.
April - -	64·0	21st	32·9	4th	53·8	42·4	1·149	13	29·863	30·479	11th	29·287	6th	Variable
May - -	71·9	30th	36·2	21st	62·2	46·3	·177	3	30·111	30·614	2nd	29·436	31st	E., W., S.E.
June - -	77·6	26th	42·3	15th	67·1	51·3	1·872	12	30·084	30·466	24th	29·557	30th	N.W., E., S.W
July - -	73·8	6th	48·1	4th	65·3	53·0	4·503	16	29·837	30·281	4th	29·341	21st	N.W., W., S.W.
August - -	71·7	28th	46·3	25th	65·8	54·2	3·548	27	29·818	30·216	25th	29·247	11th	S.W., W.
September -	72·0	2nd	43·0	22nd	65·9	52·2	·543	7	30·102	30·420	20th	29·494	10th	S., S.W., W.
October - -	65·8	1st	29·6	29th	51·8	40·6	2·840	16	29·865	30·518	17th	29·077	3rd	N.W., W.
November -	58·8	15th	34·3	4th	51·3	42·7	3·582	21	29·776	30·447	24th	28·490	10th	W.S.W., S.W. E.
December -	56·0	30th	25·3	21st	45·9	37·3	3·944	27	29·723	30·290	27th	28·844	15th	W., S.E.
Extremes, Totals, and Means	° 77·6	June 26th	° 16·9	Jan. 9th	° 54·7	° 43·3	Ins. 31·242	Days 194	Ins. 29·894	Ins. 30·630	Jan. 30th	Ins. 28·490	Nov. 10th	W., S.W., E.
					49·0°									

JOHN WILLIAM MOORE, B.A., M.D., Univ., Dubl.; F.R.C.P.I.;
F. R. Met. Soc.

January 1, 1896.

PERISCOPE.

THE LAWS OF PUBLIC HEALTH.

THE National Health Society, 53 Berners-street, Oxford-street, London, W., have published, in the form of a leaflet, the following information, compiled by Dr. Langford Symes, Medical Officer of Health, Kiltegan, Co. Wicklow:—In the interests of the public health, and in order that sanitary districts may be rendered as healthy as possible, and that the houses of all classes be kept in a pure and wholesome state, attention is particularly directed to the following provisions of the Public Health (Ireland) Act (41 & 42 Vict., cap. 52), by which law it is enacted that—1. No manure, cesspool, sink, ashpit, privy, urinal, drain, sewer, pool, ditch, gutter, watercourse, or accumulation of refuse shall be kept in such position, state, or condition as to become injurious to health, or a nuisance to the public. (Sect. 107.) 2. No house or premises shall be kept so overcrowded, or in such an unclean, impure, or unwholesome state as to be injurious to health or a nuisance. (Sects. 56, 107.) 3. No person shall keep any swine or pigsty in any dwellinghouse, or so keep any animal as to become a nuisance or injurious to health. (Sects. 57, 107.) 4. No person shall allow any well, pump, cistern, or watercourse used as drinking water, to become polluted. (Sects. 78, 79.) 5. No person shall let or occupy, or suffer to be occupied, separately as a dwelling, any cellar, vault, or underground room unless such be constructed according to the scale set forth in this Act. (Sects. 82, 83.) 6. No person shall keep any house as a common lodging-house or receive therein any lodger unless such house be registered. (Sect. 88.) All such lodging-houses shall be limewashed in first week of April and October. (Sect. 93.) 7. No licensed slaughter-house shall exist on any premises without a legible notice board affixed thereto. (Sect. 106.) 8. No article shall be exposed, conveyed, deposited, or prepared for sale as food, which appears to any sanitary officer diseased, unsound, unwholesome, or unfit for the food of man. (Sect. 132.) 9. No person suffering from any dangerous infectious disorder shall wilfully expose himself in any public place, shop, inn, or public conveyance. No person shall give, lend, sell, transmit or expose any infected bedding, clothing, or rags. (Sect. 142.) 10. No person shall expose, without proper precaution, wake, or permit to be waked, in any place over which he has control, the body of any person who

has died of any dangerous infectious disorder. (Sect. 142.) 11. No person shall knowingly or negligently send a child to school who within three months past has been suffering from any dangerous infectious disorder. (Sect. 146.) 12. No person shall send a child to school who has been resident in any house in which such dangerous infectious disorder has existed within six weeks without a medical certificate. (Sect. 146.) 13. No animal of any description shall graze or be within the limits of any burial ground having a sufficient fence. (Sect. 171.) To keep houses healthy admit plenty of sunlight and fresh air, and apply soap and water freely to all parts. Limewashing should be done in first week of April and October. Brush the old lime off. Mix 5 lbs. of fresh lime in 2 gallons of water, adding 1 lb. of melted size or ½ pint of boiling oil or fat. This is a good disinfectant (milk of lime). Whitewashing or cleansing of any house may be ordered by the sanitary authority. (Sect. 56.) Bad smells may be prevented by the following means, but if possible the cause must be discovered and removed :—From sinks and gutters. Flush freely with water and pour down Condy's fluid (1 teaspoonful to a pint of water), permanganate of potash (sufficient to make water a deep pink colour), carbolic acid (1 tablespoonful well stirred in a pint of hot water), chloride of lime, milk of lime (2½ lbs. fresh lime in 1 gallon of water), sanitas, izal, creolin ("Jeyes' disinfectant"), or green copperas. Out of doors for refuse, manure, &c., bury just beneath the surface of the ground away from wells, or cover with dry earth, dry ashes, charcoal, tar, chloride of lime, or milk of lime. For disinfecting in cases of infectious disease, special advice should be obtained. [This leaflet costs 1d. each, 9d. per doz., 5s. per hundred, 25s. per thousand.]

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.

At a meeting of medical practitioners connected with British health resorts, held at Limmer's Hotel, Conduit-street, W., on the 9th of January, the above Society was formed, to carry out the following objects :—"To provide means for the association of medical practitioners connected with British health resorts, and to promote good fellowship amongst themselves and with members of other branches of the medical profession; to encourage the theoretical and practical investigation and study of Balneo-Therapeutics and Medical Climatology; to advocate and sustain within the profession the interests and claims of British Balneology and Climatology." It had long been felt that such an association was needed, and the recent publication of the first Report of the excellent work done by the committee appointed, by the Royal Medical and Chirurgical

Society, to inquire into the Balneology and Climatology of Great Britain, seemed to come partly as a reproach and partly as an incentive to those practitioners at health resorts who are so intimately and practically interested in the subjects. It is hoped that the new society may accomplish much good scientific work, and thus assist and further the objects of that committee, as well as secure for British health resorts the recognition and support which they deserve from the profession at large. The following gentlemen have been elected officers of the Society:—Honorary President: Sir Edward H. Sieveking, M.D., F.R.C.P., K.C.B. Honorary Vice-Presidents: Sir John Banks, M.D., LL.D., K.C.B.; Edward Robert Bickersteth, F.R.C.S.; J. Mitchell Bruce, M.D., F.R.C.P.; Professor John W. Byers, M.D., M.A.; Professor M. Charteris, M.D.; Sir B. Walter Foster, M.D., F.R.C.P., D.C.L., M.P.; W. Miller Ord, M.D., F.R.C.P.; D. Lloyd Roberts, M.D., F.R.C.P., F.R.S. Ed.: Sir Thomas Grainger Stewart, M.D., F.R.C.P., F.R.S. Ed.; Hermann Weber, M.D., F.R.C.P.; C. Theodore Williams, M.D., F.R.C.P.; I. Burney Yeo, M.D., F.R.C.P. President: Henry Lewis, M.D., Folkestone. Vice-Presidents: R. Eardley-Wilmot, M.B., Leamington; D. Edgar Flinn, F.R.C.S., M.R.C.P., Kingstown; R. Fortescue Fox, M.D., M.R.C.P, Strathpeffer Spa, N.B.; H. R. Freeman, F.R.C.S., J.P., Bath; William Haldane, M.D., Bridge of Allan; Alfred Haviland, M.R.C.S., L.S.A., Douglas; Samuel Hyde, M.D., Buxton; John Inglis, M.A., M.S., Hastings; Edward Mackey, M.D., M.R.C.P., Brighton; A. S. Myrtle, M.D., J.P., Harrogate; William V. Snow, M.D., M.R.C.P., Bournemouth; George S. Watson, M.R.C.S., L.S.A., Tunbridge Wells. Council: Edwin Baily, M.B., C.M., Oban; George B. Barron, M.D., Southport; R. O. Gifford Bennet, M.D., J.P., Buxton; Andrew A. Brockatt, M.D., Malvern; W. King Bullmore, M.D., Falmouth; G. A. Cadew, M.R.C.S., L.S.A., Cheltenham; J. Michell Clarke, M.D., M.R.C.P., Clifton; H. Evelyn Crook, M.D., F.R.C.S., Margate; R. Cuffe, M.R.C.S., L.S.A., Woodhall Spa; Morgan Dockrell, M.A., M.D., London; Thomas Johnstone, M.D., M.R.C.P., Ilkley; H. Shirley Jones, M.R.C.S., L.S.A., Droitwich; Arthur Kempe, M.D., M.R.C.P., Exmouth; George C. Kingsbury, M.A, M.D., Blackpool; A. Eyton Lloyd, M.D., J.P., Rhyl; Thomas Macqueen, M.B., C.M., Eastbourne; E. F. Martin, M.B., Weston-super-Mare; Henry McClure, M.D., Cromer; William Moxon, M.D., L.R.C.P., Matlock; J. Ivor Murray, M.D., F.R.S. Ed., J.P., Scarborough; James Nicol, M.D., J.P., Llandudno; A. W. Orwin, M.D., M.R.C.P. Ed., London; John Ormsby, M.D., L.R.C.P., Dover; Frederick Pearse, M.D., F.R.C.S., Southsea;

William H. Pearse, M.D., M.R.C.P., Plymouth; Reginald Pollard, M.B., Torquay; William A. Shann, M.B., Lowestoft; C. H. Tamplin, M.R.C.S., L.R.C.P., Ramsgate; Alexander Thom, M.A., M.D., Crieff; C. W. E. Toller, M.D., Ilfracombe. Hon. Treasurer: C. R. B. Keebley, F.R.C.S. London. Chairman of Council: Samuel Hyde, M.D., Buxton. Hon. Secretaries: Aylmer A. Macfarlane, L.R.C.P., Brighton; Septimus Sunderland, M.D., London. All qualified medical practitioners connected with British health resorts are eligible for membership; but, although the Society is intended primarily and principally for members of that particular branch of the profession, medical men not connected with health resorts but who take an interest in the subjects of Balneology and Climatology are also eligible for membership. It is proposed to hold most of the meetings for papers, discussions, &c., in London, as being a convenient centre, and the use of a room at Limmer's Hotel has been temporarily secured. Dates and hours will be arranged, as far as possible, to suit the wishes of members. The advisability of holding an annual meeting at a health resort will also be considered. The inaugural meeting and conversazione was held on Wednesday, January 22nd, at 8 p.m., at Limmer's Hotel, Conduit-street, London, W., when addresses were given by Dr. William Miller Ord and others. The annual subscription has been fixed at 10s. 6d. Forms of application for membership and any information will be supplied to medical men desirous of joining the Society, upon application to one of the Hon. Secretaries.

A LEGIBLE PRESCRIPTION.

In an amusing French farce, "Le Homard," a husband suddenly returning home one evening surprises a stranger with his wife. The latter does not lose her presence of mind, and says to the husband that, having suddenly been seized with illness, she had sent her maid for the first available doctor, and that this gentleman was the doctor. The husband thanks the gallant for his speedy appearance, and asks if he has already prescribed anything. The gallant, who, of course, is not a doctor, tries to make himself scarce; but the anxious husband insists on having a prescription, so that the Galen, bathed in cold perspiration, is compelled to give one. The husband casts a glance at it; it consists of wholly illegible marks. "And will the chemist be able to read that?" asks the husband, shaking his head. "As if it were print," asseverates the false physician, again trying to make his escape. The husband, however, adjures him to remain, and holds him fast till the maid returns from the chemist. In a few

minutes she makes her appearance. The Galen prepares himself for a catastrophe. No. The maid brings a phial of medicine, a box of pills, and some powders. "Did the chemist give you those?" demands the Galen in bewilderment. "Certainly." "On my prescription?" "Of course it was on your prescription," replies the astonished maid. "Has the chemist made some mistake?" interposes the troubled husband. "No, no," our Galen hastens to reply; but he contemplates the medicines for a long time and becomes lost in reverie.—*Med. Rec.*

INCREASE OF INSANITY.

THERE is a doctor in St. Louis who says that he has treated two million cases of insanity in the last thirty years. This statement, we understand, was made while he was serving in the capacity of an expert on the witness stand. He subsequently affirmed the correctness of the statement in a letter to the *Medical Weekly*. Two million cases in thirty years means 66,666 cases every year. This means 182 cases a day. Allowing that the doctor, with this active practice, slept only six hours and worked the remaining eighteen seeing his two million cases, this would give him about ten cases of insanity every hour of the day, or one every six minutes. This, of course, is quite a possible feat, but it shows an extraordinary activity on the part of the St. Louis mind. The more fairy-like side of the tale comes out when one studies the source from which the two million cases of insanity came. If the statistics of this country are correct, there have not been two million cases of insanity in all the United States within the last thirty years. There may be uncounted millions of lunatics, however, in Missouri, being so near to Kansas.—*Med. Rec.*

BONE-MARROW IN ANÆMIA.

IN a paper by Dr. John S. Billings, Jr., read before the Johns Hopkins Medical Society, the efficacy of bone-marrow was considered, and its use illustrated by the history of selected cases. The first case of anæmia treated by this agent was reported by Fraser. Results were excellent. Bigger gave an account of a boy suffering from leucocythæmia, who also was treated with bone-marrow. There was rapid diminution in the size of the spleen and marked improvement within a week. In the author's cases, those of chlorosis were benefited, while the persons suffering from pernicious anæmia were not improved. The conclusion is that the extract of bone-marrow may be of value in cases of ordinary anæmia and chlorosis that would be benefited by iron in other forms. The

marrow was given in a glycerine extract. Twelve ribs of sheep were carefully scraped and chopped into small fragments, then rubbed up in a mortar with one pound of glycerine. This was allowed to macerate for three or four days, being kept in a refrigerator during that time. It was then strained through gauze, and the resultant liquid given in teaspoonful doses three times a day.—*Med. Rec.*

SHIPOWNERS' LIABILITY FOR MEDICAL ATTENDANCE.

An important case to shipowners has been decided in Ayr Sheriff Court. The question raised was as to the liability of a shipowner for surgical attendance rendered to a seaman on board ship in a home port. The action was at the instance of Dr. Charles M. Stewart, Govan-road, Glasgow, who sued the Garnock Steam Shipping Company, Limited, for £1 1s., his professional fee for services rendered to M. Costello, fireman on board the steamer Burnock, who sustained injuries through falling down an open hatch while the vessel was lying at the general terminus, Glasgow. The defenders denied liability on the ground that the ship, being in a home port, the master was not entitled to pledge the shipowners' credit for such surgical attendance. Sheriff Orr Paterson, before whom the case was tried, found that the Merchant Shipping Act of 1854, section 228, sub-section 3 (re-enacted in the Act of 1894), and which provides that "the expense of all medicines and surgical or medical advice and attendance given to any master, seaman, or apprentice whilst on board his ship shall be defrayed by the owner of such ship," applies to the present case, and that the defenders are therefore liable to the pursuer. He accordingly gave decree for the doctor's fee of £1 1s. and £3 10s. of expenses.—*Liverpool Journal of Commerce*, January 20, 1896.

CLUB PRACTICE.

We learn from the *Canadian Practitioner* that the physicians of London (Ontario) are making a very determined effort to stop lodge practice, and forty-one out of a total of forty-six medical practitioners of that city have signed an agreement which begins as follows:—"We, the undersigned medical practitioners of the city of London, severally covenant and agree each with the other, that on and after the first day of January, 1896, we will not engage in, or contract our services for, lodge or club practice." "It will be noticed," our contemporary continues, "that this agreement will not be binding unless all the physicians of London sign it. We sincerely hope that the remaining five will be induced to co-operate.

We have no desire to see the public suffer, and we hope that the sick poor will, in no case, be neglected; but we do wish to see the end of a system that is very materially lowering the tone of our profession. It is feared by some that, even if all in London agree upon this course of action, outsiders might be imported. This might happen, but such importations would be such contemptible creatures that they could scarcely hope to command the respect even of lodge members." Cork papers please copy!

TWELFTH INTERNATIONAL MEDICAL CONGRESS.

We are requested by the Secretary-General, Professor F. F. Erismann, M.D., to announce that, in accordance with the august approval of his Imperial Majesty the Emperor of Russia, the Twelfth International Medical Congress will be held in Moscow between the 19th and 26th of August (new style) in the year 1897, under the patronage of his Imperial Highness the Grand Duke Serge Alexandrovitch. The President of the Congress is Professor I. F. Klein. The Treasurer is Professor N. F. Filatow. Further details about the organisation of the Congress will be published at as early a date as possible.

COUGH MIXTURE FOR PHTHISIS.

℞.—Sulphate of codein, 0·0075 grammes; dilute hydrocyanic acid, 2 drops; spirit of chloroform, 15 drops; mucilage of gum arabic, 15 drops; syrup of wild cherries, 4 grammes—mix. A teaspoonful for a dose.—Consumptive Hospital, Philadelphia.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Wright's New Improved Chart Holder.

Messrs. John Wright & Co., of Bristol, who are so well known as enterprising medical publishers and printers, have designed a substantial and very neat chart-holder for use either in hospital or in private practice. It is fitted with imperishable nickel-plated corners and eyelets. The holder submitted to us is adapted for a clinical chart 10 inches long by 8 inches wide, but the case can be made to suit charts of any size and with the name of the hospital stamped in gold over the chart. The prices are moderate. Single cases are made to size from one shilling and sixpence each. Ordered in large number, the price is from one shilling each inclusive, according to size.

In Memoriam.

GEORGE HUGH KIDD, M.D. Edin., F.R.C.S.I.,

Died December 26th, 1895,

AGED 71.

In common with the whole Medical Profession, and with hosts of friends, we mourn the death of Dr. Kidd. In that sad event we deplore the loss of a whilom Editor of this Journal, a valued and able contributor to its pages, and a representative man in many a phase and walk of life.

It will be our pious duty, in our next number, to recall something of the life and work of our friend and colleague. He has left us the heritage of a great name, an unsullied reputation, a far-reaching influence for good, and a noble life. His powers of mind and of heart were spent in the service of his fellow-man, and for the advancement of the Profession which he so adorned and which he loved so well.

Were we to apostrophise the goddess of marriage and of childbirth, we should say of him, in words adapted from Horace :—

> "Multis ille bonis flebilis occidit;
> "Nulli flebilior, quam tibi."—Pronuba,
> Juno, Lucina!

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

MARCH 2, 1896.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XI.—*The Irish Poor-law Medical Service.*[a] By WILLIAM THOMSON, M.A.; Fellow and Vice-President of the Royal College of Surgeons in Ireland; Surgeon to the Richmond Hospital; and President of the Dublin Branch of the British Medical Association.

THE first duty which I have to discharge, as President of the Dublin Branch of the British Medical Association, is to thank you for the honour which you have so generously conferred upon me. I succeed men of high distinction and honourable name in the profession, and of these I place amongst the most prominent, Mr. Swanzy, whom I immediately follow—the friend of all of us—who has shown such dignity and admirable diligence in the management of the branch. I can but try to emulate them in their devotion, not only to the interests of the members directly associated with us, but in doing all that is possible to further the common cause of our profession in this country.

Two years ago, when Dr. J. W. Moore addressed you from this place, he called attention to the work which the British Medical Association had done in connection with the profession in Ireland, and he urged upon those not joined with us the importance and advantage of becoming attached to

[a] Being a Presidential Address delivered before the Dublin Branch of the British Medical Association, on Saturday, February 8, 1896.

this body. His Address showed the vitality of the Association, and the enormous influence which it exerts in bringing about desired reforms. I will not attempt to go over that ground, but I may recall to your minds, by way of supplement to his remarks, the work in which the Association is just now engaged in regard to Irish Workhouse Infirmaries. Dr. Moorhead, of Cootehill, was the first to make an effort in this direction, moved to it by the Reports which were being published on English Workhouses by the Commissioner appointed by Mr. Ernest Hart. When time permitted, Mr. Hart despatched the same Commissioner to Ireland. The lady entrusted with the duty was entirely suited to the task. She had hospital training, had great experience as a hospital superintendent, had a temperate and sound judgment, and after her thorough examination of English workhouses, many of which were in a lamentable condition, she had all the qualifications which were needed to present a full and unexaggerated picture of the state of our workhouse infirmaries. The accounts which have come from her pen are inexpressibly sad, and in a sense they provide a reason why, apart from the natural repugnance to the workhouse, the poor of this country struggle on to the last rather than accept the shelter it affords. In some cases the care of the sick is only a phrase, and the doctor who is unfortunate enough to be attached to such an institution, often sees all his efforts foiled by the inadequate means provided for proper nursing. Of course it was to be expected that when these Reports appeared there would be a great outcry. Boards of Guardians do not care to have their assumed perfection assailed, but they are gradually ceasing to be cross after their awakening, and something is at last being done to remove at least one reproach from the management of Irish workhouses. The Local Government Board has taken its full share of the responsibility. It is hardly necessary to say that as an authority it is not popular. A power that does not always approve the action of poor-law boards will never, to that extent, stand well with the controlled; but the public voice of the land will cheer it on in any well-considered effort which it may make to render the pauper's life less miserable, and above all to secure for the sick the care and tenderness,

and even common decency which our humanity demands for them.

As it stands at present, not only the workhouse infirmary, but the workhouse itself, is a blot upon our charity administration. There are exceptions, of course, but, generally speaking, there is, all over the country, a lack of appreciation of the true purposes for which these places exist, and of the responsibilities which rest upon the managers. Workhouses are, in the first place, intended to be the resting-places of that large body of "veterans of industry," as Bernard Shaw calls them, who have failed in the struggle of life. Circumstances, however, have made them too often the home of younger people who cannot get work in times of depression, of the lazy and thriftless. For the last class the workhouse as it is managed is a curse instead of a blessing. If they are lazy it makes them lazier; the moral atmosphere for the young of both sexes tends to blunt what is good in human nature and to stimulate what is bad. We all know this. To remedy it we want some healthy initiative; but I do not think that is likely to occur until the law is changed so as to permit the election of women to these Boards. The power exists in England; it does not exist here, and the need of an alteration has been forcibly shown by Dr. Winifred Dickson in a paper read before the Royal Academy of Medicine last Session. But legislation is slow, and meanwhile great harm is being done. Is it not even now possible for the women of our country to combine in forming visiting committees, which could consult with the Guardians and suggest improvements. We might have even now the advantage of their experience in management, and the softening influences of their presence, and there would result, I am sure, not only large economies, but greater comfort—the better up-bringing of the young, the protection of their morals, and the development of a spirit of industry.

But this is only a part of a great question which affects so many of our brethren, and if I refer now to the unhappy condition of a large proportion of the poor-law dispensary doctors in Ireland, it is because I know you have not only shown your sympathy with their troubles, but have worked hard to have them removed. It has been said quite recently

that we who happen to live in Dublin are out of touch with the wants and aspirations of our friends in the country. That is the opinion of some who are happy in the irresponsibility and inexperience of youth, and who are necessarily ignorant of the efforts which have been made, and the success which has been won. Where, I ask, has any work of practical utility been done but in Dublin, and mainly by Dublin men? The necessity of their engagements has prevented the attendance of many from the country whose wisdom would help; and so, mainly, it has been left to us, whether as members of this Association, or of the Irish Medical Association, to formulate claims, to watch over interests, and generally to protect the rights and privileges of the poor-law medical officers. We who take a share in the work do not all belong to that service, but no one of us refuses to acknowledge the disabilities from which so many suffer, and to spend laborious days in a crusade against the evils which have grown up, and are perpetuated by inflexible laws.

The system of Irish poor-law medical relief as it stands at present is a cruel injustice to the doctor. The red ticket is sometimes converted into an instrument of torture to worry him out of his position. Many issue it in their shops to attract the visits of useful customers who may buy whiskey or groceries. It is in reality made an article of barter. Well-to-do farmers, with wide-spread acres, do not hesitate to avail themselves of this pauper relief. Members of dispensary committees have issued tickets for attendance upon members of their own families, and the doctor must obey the order, even when he knows the ability of his patient to pay a liberal fee. Day after day he has to submit to this systematised fraud; and although there is a nominal redress, every one knows that he dare not seek it, lest he should arouse the ire of those who could mar his future.

The red ticket is properly provided to carry medical relief to the poor who cannot come to the doctor. Primarily, the object is a humane one; in practice it often means inhumanity to the unhappy medical officer. It may be that he has to drive thirty, or even forty, miles on a visit to a person who can pay, but who does not. He must provide his own horse and car, and in some districts, where there is no practice, his

whole income may be only £120 a year. In addition he must feed and lodge himself, and perhaps a family. I have a case before me at this moment in which the doctor is in these circumstances. His salary is £75, with a few vaccination fees. The Local Government Board has refused to give its sanction to an increase. He is an educated gentleman, who has spent large sums, as all have, on preparing for entrance to a learned profession. He is, in fact, by no means so well off as a skilled labourer. He is a type of many in the poorer districts of the west and south, and north-west, and he accurately corresponds to the definition of a poor person given to me in 1892, and characterised by much grim humour—"A poor person is a dispensary doctor without practice."

Well, one would think that men of this class, having worn out their lives in a branch of the public service, would be suitably protected from the miseries of an old age marked by the crowning woe of poverty. We know it is not so. We know that although guardians have the power to grant a pension at the Civil Service rate, there are many boards which positively refuse to give a wretched retiring pittance to the doctor. I have produced evidence elsewhere to show that there are large districts in which the medical officer's age varies from 70 to 80 years. In one case the age was 86. You may ask how is this possible? The answer is simple. The law regarding pension is permissive, not compulsory. It further requires that an officer must resign before the question is considered. Knowing what we do, you will understand why the doctor refuses to place himself at the uncertain mercy of a board of guardians who may think nothing of his often heroic life's labour, and who only regard the more important question—whether a sixteenth of a farthing in the pound may be added to the rates.

See, then, how the system works, and how in the end this becomes a serious question for the community at large. You cannot expect a man of 80 or 86 to be a very alert or active officer, no matter what his abilities may be. He is not the one who would be selected to cope with violations of sanitary law, or the consequent outbreak of an epidemic; and yet these are, perhaps, the most important of his functions. Thus the blundering penurious guardians, supported by a

ridiculous law, imperil the lives of their own people, and may even be the means of subjecting whole districts to devastating outbreaks.

For thirty or forty years an agitation has been kept up upon these and other questions connected with the poor-law medical service. Long ago I became convinced that it demanded a thorough change, and that to make it efficient it ought to be converted into a public service in the truest sense, and taken out of the hands of guardians and dispensary committees. It is a matter of common notoriety that in many cases the elections are conducted on lines other than the merits of the candidates; and the majority of the existing officers, with all the knowledge that comes from painful experience, are in favour of an arrangement of this kind.

In 1892, I published the outlines of a scheme which I think would, with some modification, meet the case. I may repeat my suggestions here :—

1. That all dispensary and union medical officers should be admitted to the service by competitive examination by special examiners appointed by the Local Government Board.

2. That pending appointment to a district, successful candidates should be employed to do duty during the absence of the incumbent from any cause, such as illness, annual holiday, &c.

3. That junior officers should, in the first instance, be appointed to distant and poor districts.

4. That promotion should be recognised in the service, so that an officer might be moved from a poor to a better district, where private practice would be available, but that in no case should an officer be moved on promotion unless he was willing to accept the offered position.

5. That promotion should also include the moving of a medical officer from a dispensary to a union hospital appointment.

6. That there should be an increased salary at least in the poorer districts, where practice is not available to any appreciable extent. Probably it would be found best to arrange the salaries in three groups: 1st, in the distant sparsely

populated district, as in the north-west, west, and south-west; 2nd, in the better rural districts; 3rd, in the cities and large towns. The basis of pay might be in such proportion as this: 1st, $2\frac{1}{2}$; 2nd, 2; 3rd, $1\frac{1}{2}$; with allowances for vaccination and sanitary work.

7. That in all cases pensions should be allowed after a fixed number of years' service at the rate of two-thirds of the whole official income, that is, including fees for vaccination and salary for sanitary work.

8. That in every case retirement should be compulsory at the age of 65 years.

9. That the limit of age for entrance into the service should be 30 or 35 years.

10. That the higher appointments, such as inspectorships, should be given to medical officers of the service.

This, of course, is a mere sketch. It suggests no violent change, unless the assimilation of the department to other departments of the public service be deemed one. It places the appointments simply on the merits of the candidates, irrespective of religious and political influence. It allows the doctor to practice, gives at least a bare existing salary to men in poor districts where the work is very heavy, provides for promotion, and secures a pension on the terms provided for civil servants.

To all such proposals of course there will be objections. For instance, it is urged that as all candidates must be qualified medical men, therefore the guardians must always be safe in their selection. But the same thing holds good in the medical services of the army and navy. The system of nomination by interest has been given up. Every man who passes for his diploma is not in the first rank; and so the medical men who have charge of our soldiers and sailors are chosen on the grounds of their absolute merit, by open competition, unassisted by the accidents of birth or influence. Why should not the civil population have the same guarantees of efficiency?

Again, it is urged that the guardians, as the representatives of the ratepayers, could not surrender their right to elect medical officers. But it is important to remember that one-half the cost of the medical charities in Ireland is paid

by the Treasury, and that the country at large, as represented by the Government, is entitled to a voice as to the way in which the money is disbursed. If it has been found a beneficial thing to have examinations for entrance into the Army or Navy medical service, or the County Surveyor service, or the service of the National Board of Education, upon what reasonable ground can a like advantage be withheld in the case of the Poor-law? It is not of less importance than any I have mentioned; nay, it is in many respects of more importance to the civil community, for to the poor-law medical officers is entrusted the guardianship of the public health in their several districts; and it is on their energy and devotion and skill that we must rely to ward us from the epidemics that might otherwise sweep over the land.

This proposal to establish a public service is in accordance with the views of the great body of the dispensary doctors themselves. They have full knowledge of the inner life of the service; they know its workings in all respects, and the worries and wrongs from which most in it suffer. It is a significant fact, then, that their voice should be raised in favour of a system of competition, and of such reorganisation as would lift the service into the high position it ought to occupy, giving content to its members and greater security to the public.

Other schemes have been suggested, notably that of Professor Kinkead of Galway, who would place in the hands of one civil medical department the entire civil medical work of the country and all public sanitary duty. Into the merits of his plan I will not now enter, because the first thing to do is to establish the principle of a public service, and then to see how it may be most effectively carried into operation. I have no doubt at all that public competition is the method by which the service would be elevated in character and efficiency, and by which the public interests would be best protected.

I have only briefly referred to the more prominent complaints of the Irish poor-law dispensary doctors, and to the scandals which everywhere in some form exist in the administration of medical relief to the poor. These have been before the country for years; yet a great deal of ignorance

still exists, and it is only by persistent urging of claims that one may hope that in the end some notice will be taken. It is too apt to be lost sight of that this cry for justice from a large body of ill-paid and devoted men, does not involve only their personal interests. There is the much larger question of public policy. It is for the advantage of the people that the machinery by which the public health is preserved or restored should be in the best possible hands; that it should always be efficient; and that its creation and maintenance should not be in the control of Boards of Guardians who frequently do not realise their responsibilities, but rather yield to their prejudices.

Well, how is this state of things to be corrected? The agitation against it has gone on for years. Government after Government has been approached on some special point, and with a few exceptions, with little effect. Chief Secretaries have been occasionally sympathetic; more commonly they have raised up a barrier of difficulties behind which to shield themselves; and so the struggle has proceeded, until the sufferers from this wretched system have grown weary and almost hopeless. I think the future plan of action needs very deliberate consideration. There is little good to be gained by periodical visits to the Government, asking for the removal of this or that wrong. We must take the higher ground of charging against the whole system that it is bad to the core; and that there is no use in a policy of tinkering. It is waste of money, of time, of temper, for, after trifling improvements have been made, the service remains unsatisfied and thoroughly discontented. If changes are to be effected which shall be really lasting, and of advantage to the departments and to the public at large, there must be a thorough enquiry by competent men. We must ask the Government to appoint a Commission to investigate the working of the poor-law medical relief system in this country in its relation to the poor, the ratepayers and the medical officers. By this means we shall be able to prove our case, and to fix public attention upon the glaring evils which have become interwoven with the system.

We shall be able to gather evidence as to the best method of reorganising the whole poor-law medical service, so as to

make it most effective—at once satisfactory to the officers, a benefit to the sick poor, and a safeguard to the public health. I should like also to see arising out of it a scheme which would, as in the Colonial services, secure a pension, not only for the medical men themselves, but for their wives and children, who, too often, are left derelict, to seek the uncertain charity of the profession.

To help in gaining all this, I suggest that every public medical body in this country should be invited to join in a common demand, the form of which can be determined by this branch; that it should also have the support of the Council of the Association, and, if necessary, of the Association itself, by resolution submitted at the general annual meeting. Such a request so supported could not be lightly treated, and we should then have the opportunity of showing what are the wrongs and what are the remedies.

Gentlemen, I will not further detain you. I knew from the sympathy which you have always shown on this subject that I could count upon your forbearance. The greater number of us do not belong to the service in whose interests I have spoken. But you have never forgotten the brotherhood of Medicine, and I know you are ready to-day, as always, to send to our kin, even at the uttermost parts of the land, a message of hope and of sympathy. If you and they approve what I have suggested, I am sure you will give it hearty support. What we want is continuous and concerted action, and the suppression of ridiculous jealousies, which can only irritate and harm. I shall, indeed, be gratified if, at the close of my term of office, we can say that the cause for which I speak has been advanced, and that the dispensary doctors are within sight of those reforms for which they have so long and patiently pleaded.

ART. XII.—*An Unusual Rash in Enteric Fever.* By JOHN MARSHALL DAY, M.B., Resident Physician, Cork-street Hospital.

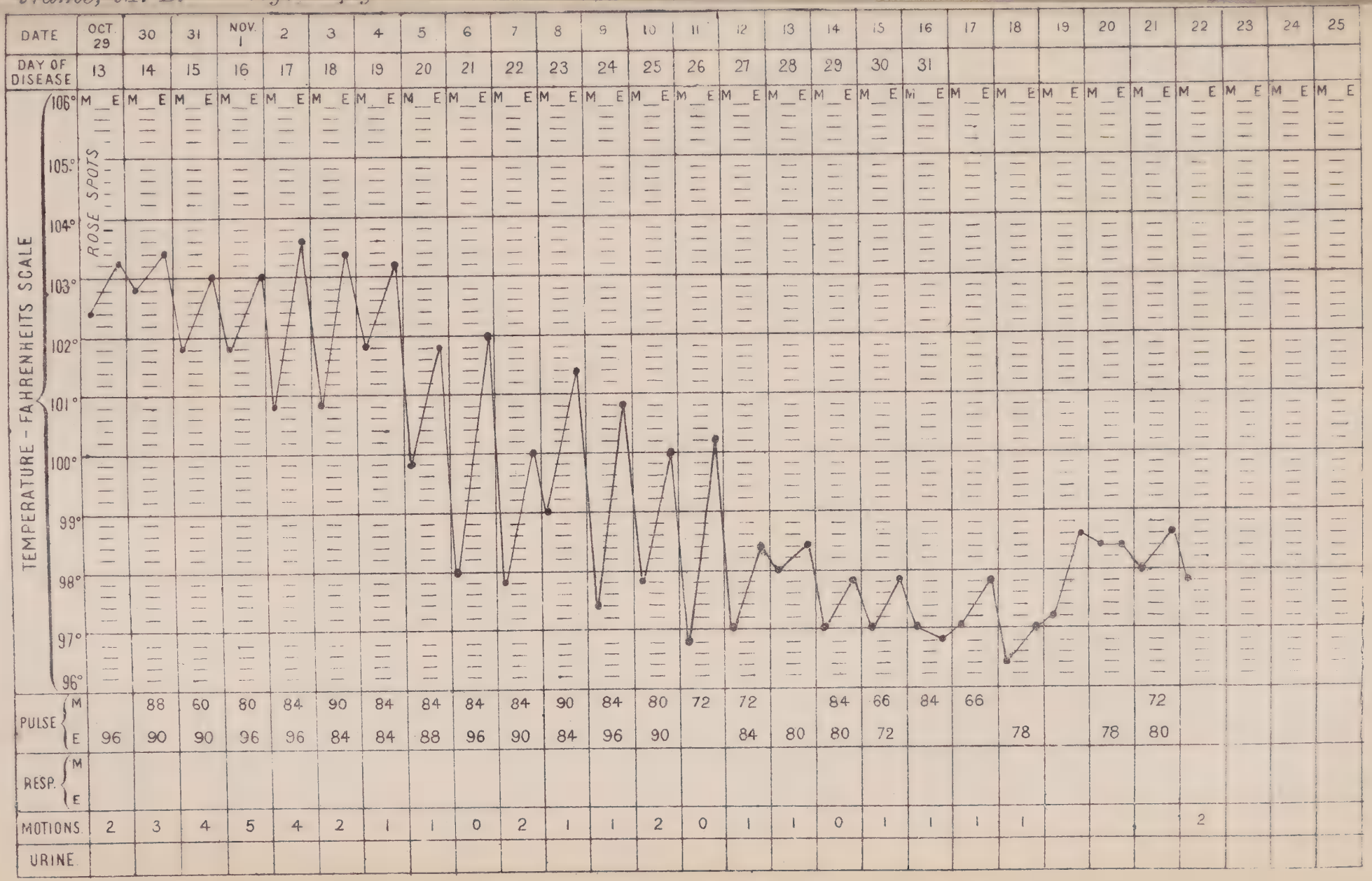
ON page 511 of Cayley's 3rd Edition of Murchison's "Treatise on Continued Fevers," we find these words:—"In speaking of enteric fever, occasionally when the rash is more than usually abundant, the spots are persistent, forming distinct elevated papules of a darkish-red colour, which do not disappear on pressure, and when they fade leave brown stains, the fading on pressure is a criterion which cannot be depended on when the rash is intense." And on page 515 of the same treatise, when tabulating the 12 principal points of distinction between the eruptions which occur in enteric fever and typhus fever respectively, of the former he states "a large number does not indicate danger."

I have seen several cases presenting a rash which in many points coincide with that described above, and in illustration I will describe one recent case and endeavour to point out the characters by which it may be correctly diagnosticated.

CASE.—J. B., aged twenty-four years, labourer by occupation, admitted to Cork-street Hospital, October 29th, 1895. He was a healthy-looking man of average height and build, with brown hair, a native of the Co. Galway, from whence he had come, about 9 months ago, having obtained a situation in one of the city breweries. He gave the following history:—About 12 days before admission he awoke one morning with a headache, pain in the back of his neck, constipation, a foul tongue, and, as he expressed it, the colour of his face changed to dark yellow. He managed to work for 4 days and then took to bed; he came under our care on the 12th day of his illness, his condition on admission being as follows:—He complained of headache, want of sleep, and a great sense of weakness; the headache was chiefly frontal, but not severe; he was able to turn in bed when asked; his face was pale, eyes clear, pupils slightly dilated; absence of all tremor; skin moist. On inspection we found a rash present, slightly on the forehead and face, copious on the abdomen, back, and chest; some on the thighs and arms; absent on the hands and feet. The rash might be described in the following words:—Dark red, somewhat irregular, with a tendency to circular outline, in some places like enteric spots or enteric spots

in pairs, fairly well defined in outline; the spots were raised, not punctate; soft; disappeared on pressure—in fact, conveyed the sensation of enteric rash to the finger; some of them, after pressure, left an indistinct mottle, but at no time in the course of the disease did they in any respect correspond to true petechiæ. The patient stated that a few had appeared on the previous day, and more had come out the next morning—*i.e.*, the day of admission. There was a complete absence of mottling; the heart sounds were clear and regular; pulse 96; breath sounds normal; tongue dry, though moist at tip and edges, contracted if anything, not fissured; abdomen distended, but not excessive; moderate tympanites. Motions were, in the early stage of the disease, slightly fœtid, large, light brown liquid; later on they became dark brown with shreds like the *débris* of beef-tea. While in bed in hospital he had two attacks of epistaxis, which were easily controlled by the nurse. The diagnosis was enteric fever with copious rash. The patient was put on liquid diet, ordered sulphonal to counteract the sleeplessness, and given a mixture containing aromatic sulphuric acid, sweet spirit of nitre, glycerine, and carbolic acid. On the 31st of October the rash had faded, but fresh spots had made their appearance, some of which were more persistent after pressure; the intellect was still clear; said he felt better, but very weak, stated he was restless at night, the diarrhœa had increased, motions being what a nurse would describe as "typical typhoid." On the 8th day after admission—*i.e.*, 20th day of the fever—the notes were: tongue still dry, abdomen less distended, tympanitic note present, absence of pain, no chest symptoms. On the 12th day rash was fading, but few fresh spots on the trunk, brighter in colour, none on the extremities; all other symptoms improved. The evening temperature became normal on the 27th day of illness; rapid convalescence. On the 30th allowed to sit up in bed; on 32nd day of disease allowed up and put on No. 2 diet. On November 22nd—*i.e.*, 37th day of disease—given full diet; on December 6th left hospital feeling, as he said himself, better than ever he felt since he came to Dublin.

The points of interest about the rash in this case were the difficulty of diagnosis, and as to its prognostic value. I have seen at least 10 cases of enteric fever which presented this rash; the notes of some I will briefly recapitulate:—W. S., male, aged sixteen; C. S., brother, aged nine. They were both admitted from the Co. Wicklow with three other members of the same family, all suffering from enteric fever. The two boys who presented this rash were far severer cases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than the others—in fact, they were a month longer in hospital. I afterwards treated the first lad for well-marked petechial typhus. H. B., male, aged fifteen; severe delirium; prolonged case; epistaxis. ——, male, aged twenty-two; severe hæmorrhage twice; recovery. ——, male, aged thirty-three; severe hæmorrhage; died. S. H., female, aged eighteen; small bit of a girl; she suffered from severe hæmorrhage during the course of her attack. T. M., male, aged thirty; died of hæmorrhage. A. D., aged twenty-one, freckled, foxy-headed young female; had a severe attack of hæmorrhage on her 21st day; died of perforation brought on by the injudicious administration of grapes by her sister on her 30th day. P. F., a Dundalk bricklayer, aged twenty-one; suffered from severe epistaxis necessitating plugging of both nostrils; severe diarrhœa; eventually recovered. T. M., aged twenty-one, medical student, male species; severe diarrhœa, epistaxis, and serious pulmonary complications; recovery. In discussing these points we will first consider the question of diagnosis, and next that of prognosis. This rash may be mistaken for that of typhus fever or a prodroma of small-pox. In making a diagnosis we are guided by the history of the case, the likelihood of exposure to infection, and the appearance of the rash. As regards history, the average hospital patient cannot give a definite statement as to when he became ill—this especially applies to enteric fever; even in typhus fever I have found they often persisted in stating that they were only one or two days ill, when subsequent events proved they must have been at least a week sick. Enteric, like typhus, often commences suddenly. The patient in question may have been exposed to the contagion of typhus, so we had but one point to go on, the patient as he was when he came under observation, and the points we noted as against the diagnosis of typhus were: clear intellect, with absence of marked headache or backache; absence of the muddy eye and muddy complexion of typhus; absence of mottling, with the rash two days old—a very valuable diagnostic point, and the *tout ensemble* of the rash as regards elevation, locality, where copious and where absent; it was more raised than typhus in my experience ever is; it was not more copious in the depending parts, not

present on backs of wrists, dorsa of feet, inner side of thigh, and very little on the sides of the body. Typhus rash is uniform and general in distribution, seldom on the face, and more pronounced on the dependent parts. To diagnosticate it from the small-pox rash, the prodroma is most marked about the groins and axilla, and in fact is a purpura, and I have never seen it raised. Has a copious rash any bearing on prognosis? In my experience it has; for instance, A. D. had no bad symptoms for the first three weeks of her attack except the rash; she had hæmorrhage and deep ulceration. I have for long taught that the signs which make you expect and guard against hæmorrhage are clear intellect, high temperature, fast pulse, and distended belly; add to these the rash as described above, and you may look upon hæmorrhage as an almost certain complication; four times I have seen these symptoms, and four times successfully foretold the occurrence of hæmorrhage; even where you have the ordinary enteric rash abundant, I believe that you should look upon the case as likely to be severe, and give a guarded prognosis.

We find on analysis that 8 out of 10 of these cases had hæmorrhage, 5 had hæmorrhage from the bowel, and 3 had epistaxis; 3 of the cases died, showing a death-rate of 30 per cent. My thanks are due to Dr. Ashe for permitting me to bring this case under the notice of the Academy. Unfortunately there is little new under the sun; still of enteric fever, least of all of our exanthemata, can it be said, "*Ab uno disce omnes.*"

ART. XIII.—*Eclampsia; with Special Reference to its Treatment.*[a] By E. HASTINGS TWEEDY, Fellow and Examiner, Royal College of Physicians; Late Assistant Master, Rotunda Hospital, and Resident Surgeon to Dr. Steevens' Hospital.

IN bringing the subject of eclampsia under notice, it is not my intention to treat of it in all its branches, or occupy the valuable time of the Section by recapitulating facts con-

[a] Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, January 31, 1896.

cerning which the leading text-books of to-day fully inform us. Neither shall I enumerate the many theories advanced as to its causation, but shall rather endeavour to point out what I conceive to be the sound principles of treatment, based on the present facts known in connection with this complaint.

Almost all are agreed that the disease arises from an accumulation in the system of a toxin poison—a normal resultant of tissue waste—which the kidneys, acting in an abnormal manner, fail to eliminate.

As to the *modus operandi* of this poison I shall say nothing, believing that such speculative inquiry is outside the province of practical obstetricians, and I look forward to the day when our text-books shall cease to be padded with fairy tales of physiology.

Whatever we may call this toxin, I believe it to be similar to that which gives rise to the convulsions known as uræmic, and the arguments adduced to prove the dissimilarity of the fits are for the most part worthless. It is urged, in the first place, that the convulsive attacks differ in character, but I have not been able by personal observation to detect any difference; and certainly those mentioned by authorities, such as a different range of temperature, &c., are entirely untrue.

Again, it is said that eclampsia is not often associated with chronic forms of kidney disease, but with an acute variety that has earned for itself the name of the "kidney of pregnancy;" while, on the other hand, uræmic convulsions are equally as rare in the acute variety of Bright's disease. Before answering these objections, let me for a moment refer to this "kidney of pregnancy," for I fail totally to see on what grounds it came specially to be described as such. So far as I can discover, it differs in no way from the ordinary degeneration kidney seen under many other circumstances.

In pregnancy it is accompanied by a certain amount of parenchymatous nephritis, and arises in most instances as a consequence of that disease. Neither is it by any means constantly seen as a kidney lesion in eclampsia.

To give an answer to the question why acute nephritis is so often associated with eclampsia, we must remember that

the centres of nervous control are in a highly unstable condition throughout pregnancy, their functions being often suspended by comparatively trivial causes. It is therefore to be supposed that a smaller dose of poison will exert a graver influence in the pregnant than in the non-pregnant condition. In addition to this there is an absolute increase of toxin manufactured during pregnancy, for not only are metabolic processes more active in the woman herself, but likewise her blood receives the effete material formed during the growth of the fœtus.

This latter factor appears to largely account for the onset of eclampsia, for we find that not only do multiple births predispose to the attacks, but that the death of the fœtus enormously improves the prognosis of the condition.

Again, the rarity of eclampsia in connection with chronic Bright's disease is uo cause for wonder, for this latter disease is rare in pregnancy. It leads, as a rule, to endometritis, which in its turn leads to sterility or early abortion; while of those cases of pregnancy which persist in spite of chronic Bright's disease, as large a (if not a larger) number develop convulsions than would do so in the unimpregnated condition.

There is apparently a strong argument urged against the theory which supposes a urinary toxin in connection with this disease, namely, that eclampsia sometimes occurs without any apparent kidney disease, and no diminution in the quantity of urine secreted. In connection with this point, the observations of Dr. Ethridge, published in the June number of the *American Gynæcological Journal*, are very valuable.

He finds that many women, under certain depressing influences, secrete for long periods at a time an enormously diminished quantity of urinary solids, the kidneys at the same time being in an apparently normal condition, and that these patients exhibit symptoms similar to those known as premonitory in eclampsia.

Thus we see it is not necessary to pre-suppose disease of the kidneys when accounting for a self-intoxication sufficiently potent to excite fits under conditions favourable for their onset.

It is impossible to doubt that the kidneys are the chief

organs concerned in the elimination of the uræmic poison. That the skin and intestinal mucous membrane get rid of it to any appreciable amount is greatly to be doubted. Nature appears undesirous of relegating the functions of the kidneys to any other set of organs, and for my part I do not much regret that she has withheld from us the luxury of urinating through our sweat glands. Why do those who believe that the skin can act as a third kidney not settle the question, by injecting the sweat of a uræmic patient into some small animal, and thus contrast its poisonous effect with that of normal perspiration? Experiments such as this have already been undertaken to test the toxidity of the urine at different periods of the eclamptic attack, with the result that it has now been fully shown that the urine is poisonous to its highest degree during the convalescing period of the disease. I am told of patients who have been seen covered by a fine flour-like deposit after a severe sweating; this phenomenon must be very rare, and possibly may be due, when it does occur, to a diseased condition of the sweat glands.

In dealing with the treatment of eclampsia in the absence of any specific remedy, our efforts should be directed to counteract as many of the gravest conditions tending towards death as possible. Thus the introduction of cleanliness in midwifery has enormously lessened the death-rate in eclampsia by removing sepsis from the list of those conditions. If we except this latter as a cause of death, our present statistics bear very unfavourable comparison with those of former years, and I think the proofs are convincing that we are not at present moving along rational paths.

Chloroform may be said to be now in general use in the treatment of eclampsia, and to this the administration of chloral and of bromide of potassium is generally added. All these drugs act as powerfully depressing agents to the heart, and tend to kill in precisely a similar manner to that of eclamptic poison; for all are agreed that heart failure, followed by œdema of the lungs, is amongst the most constant precursors of death. Furthermore, chloroform as usually recommended is applied only on the occurrence of the first signs of an approaching fit. Given in such a manner, it has but slight effect in lessening the severity of the

attack; and by limiting the amount of oxygen that would otherwise pass into the lungs, it in some cases actually increases the severity of the convulsions. Much reliance, also, is placed on getting the skin to act vigorously, the supposition being that toxins are thus eliminated. It cannot be claimed for this plan that it is at all times easy in its accomplishment, very certain in its good effects, or even safe in its application—always some depression, and occasionally alarming collapse, follow from it.

I do not believe that a more fatal drug could be found for uræmic patients than pilocarpin. It is a heart sedative of the first order, and it has the additional power of promoting free salivation and bronchial secretion—very dangerous complications of the eclamptic state. But in the face of so much experience to the contrary, I am slow to think that at least a temporary improvement in the patient's condition does not follow this treatment, and an explanation of its action has occurred to me.

Convulsions result *not* from the presence of toxins in the blood, but rather from their deposition in the more solid structures of the body, especially in the nerve centres. Now, to deplete the blood by sweating would be to create a current proceeding from these structures into the blood to make good its deficiency in water; in this way the convulsive centres will get rid of some of the poison, the blood at the same time becoming richer in toxins. Whether you accept this explanation or not, I do not think that severe sweating is a justifiable proceeding, and hope to see it soon more generally condemned. Efforts also at giving drugs, stimulants, or nourishment by mouth, must be emphatically condemned. As a rule, the power to swallow is completely in abeyance, and the stertorous breathing is evidence of this fact. Thus croton oil, and even the mouth secretion, find a much easier entrance to the lungs than to the stomach. Let whoever doubts this statement pass a nose-tube on an eclamptic patient, and he will find himself astonished at the ease with which the instrument finds its way into the larynx—an impossible accident under ordinary circumstances. To ascertain the situation of the nose-tube, all you have to do is to note at what period of respiration air

rushes through it. If this occurs during expiration, then the tube is in the trachea; but if during inspiration, the tube is in the stomach, and the air is forced out by the descending diaphragm compressing that organ. It is astounding that this fact has received (so far as I am aware) no notice, for I cannot doubt that the so-called œdema of the lungs, seen with such frequency in fatal cases, is largely to be attributed to fluids which have reached them from the mouth. If this be true, it follows that position must have an important bearing on the proper treatment of these cases. In giving anæsthetics, if fluids form in the mouth, we turn our patients on the side; and so we ought to act in eclampsia, and either prevent our patient at any time lying in the dorsal position, or else employ some suction appliance to keep the mouth emptied of its contents. The gag, too, as usually recommended, and especially in the hands of a nurse, is an instrument fruitful for harm. Physiology teaches us that the act of swallowing cannot be accomplished with the teeth and lips apart. So by inserting this instrument between the teeth any remote chance of the mouth fluids reaching the stomach is entirely removed.

Let me now turn to the surgical treatment for eclampsia—namely, the induction of premature labour, and see to what extent it commends itself as a justifiable proceeding, Its claims to popularity are based on the observed fact that the death of the fœtus and emptying of the uterus, as a rule, materially improve the condition of the patient. It has also recently received commendations from the highest authorities as a prophylactic against the onset of convulsions. As regards its employment as a prophylactic agent, nothing could be more unjustifiable, for the reason that no man can say what case is, and what case is not, going to develop eclampsia—and when I add that not six per cent. of patients showing premonitory symptoms finally develop the disease, the truth of this statement will be evident. It is an unfortunate fact that the surgical treatment is growing in favour day by day, and this is not surprising, for not only has it the sanction of great names, but it also affords the medical attendant much satisfaction, substituting as it does an active mode of treatment for inactivity with apparent

impotence. I cannot but think, however, that it is unsound in theory and disastrous in practice.

I remember Dr. W. Smyly pointing out to me what he believed to be a mistake in the text-books—viz., "that the earlier in pregnancy the fits occurred, the more fatal the disease proved." He rather believes that one of the most serious complications of eclampsia is the onset of labour; and as there is less liability of labour ensuing in the early than the late months, these early cases would usually end in recovery if not interfered with by active treatment. I think a careful study of statistics will fully confirm these views. Certainly, from a theoretical point of view, we should pause before inducing labour, knowing as we do that the danger of the disease is enormously increased by the multiplicity of the fits, and that the fits are easily induced by reflex stimulation. Thus a vaginal examination, abdominal palpation, massage of the kidneys, cold blasts of air, but worst of all, and above all, the dilatation of the cervix, have been observed over and over again to increase the frequency and severity of the attacks. And yet we have to expose our patient to almost all these conditions in order that a very uncertain benefit may follow the emptying of the uterus. Those who support such unscientific methods ought at all events to be able to point to superior results in practice as a justification for them; but these, so far as I know, are not forthcoming. Thus, with your permission, I shall give some figures from Dr. Green's Report of the Boston Lying-in Hospital, which are excellently compiled and at the same time comparatively recent. They deal with all cases treated in the hospital between the years 1886 and 1892—thirty-six in all—and will be found fully published in the *American Journal of Obstetrics* for June, 1893. The number of cases is, unfortunately, not many, but will be found exceedingly suggestive.

Dr. Green divides his cases into five tables; the fifth deals with fits occurring after labour, and therefore does not concern the present subject. Table I. shows three non-viable cases in which there was no obstetrical interference: all three recovered. Table II. shows six non-viable cases in which labour was induced, with a maternal mortality of 50 per cent. Table III. shows four viable cases in which labour

was induced: maternal mortality 75 per cent. Table IV. shows eight interpartum cases with operative interference, upon the usefulness of which there is no disagreement: maternal mortality 25 per cent.

Thus we see that six of the women died on whom labour was induced, and that the mortality actually rose to 75 per cent. when this induction took place with a viable fœtus; while the mortality is *nil* in those cases in which labour did not set in, and was only 25 per cent. in those who were allowed to fall into labour naturally. As far as these figures go, I believe they fully prove the harmfulness of operative proceedings; and what appears to me absolutely astounding is that Dr. Green draws from them arguments in favour of surgical interference.

Dr. Green's statistics have been selected because they are not only recent but complete, as far as they go, and I believe the experience of the Rotunda Hospital will be found to fully agree with my reading of them.

Let me now turn to the method of treating eclampsia that has been pursued in that institution for upwards of three years, and which I had the honour of carrying out under the present Master. I allude to the hypodermic injection of large doses of morphin. Beginning with the injection of $\frac{1}{2}$ grain, this is followed in two hours by $\frac{1}{4}$ grain, and so on gradually, until either the symptoms are alleviated or until 2 grains have been given in twenty-four hours. If, in spite of this treatment, labour sets in, forceps are applied to hasten delivery so soon as the os will safely admit their application; but it is held that manual dilatation of the cervix, which in reality means a bursting of that structure, is not a justifiable proceeding. So far as my own personal experience goes, it has been entirely favourable to this treatment, nor is it (notwithstanding the fact that opium is believed to be injurious in most renal diseases) theoretically unsound. The best authorities agree in believing that opium has but little action on either the heart or kidneys, Brunton stating that the secretions from the latter organs at times are increased by its employment. Again, we know of no other drug that will lessen metabolic changes in the tissues to so great an extent, and will thus limit toxin for-

mation. It is a nervous sedative of the first order, diminishing the intensity of reflex impressions, powerfully controlling convulsions and uterine contractions, and, lastly, drying up salivary and bronchial secretions. It is obvious, therefore, that in this drug we possess a means of *counteracting to a great extent* those conditions which tend to kill in eclampsia.

It has been objected that this is a dangerous remedy, viewing it from the standpoint of safety to the child. But this argument can hardly be taken seriously when we remember the very high mortality to the fœtus that obtains, no matter what the treatment may be, and also the bettering of the patient's condition by its death. But, apart from these considerations, I do not believe that morphin can exercise any harmful influence on the child when administered as above. I have calculated that the child's body at no time can contain a dose of morphin larger than what would be equivalent to four minims of the liq. morph., and when we remember that the inhibitory action of morphin on the respiratory centre of the fœtus does not imperil its existence, it at once becomes evident that a fœtus before birth is much less susceptible to the influence of morphin than a nursing infant would be. All practical experience goes to prove the difficulty of influencing the fœtus before birth by this drug.

Let me now say a few words in praise of blood-letting. Dr. Atthill, in Dublin, has always been a warm advocate for this procedure; and lately Dr. Williams, of London, has urged its employment strongly. It was in general use when the results in the treatment of eclampsia were better than they are now; provided we eliminate the septic cases from the old statistics, and viewing it merely from a theoretical standpoint, there is much to be said in its favour. By abstracting blood we relieve the kidneys, we dry up the bronchial and salivary secretions, diminish venous congestion, and remove an absolute amount of toxin from the body.

If the amount of blood required was abstracted by two operations, with not more than an interval of a couple of hours between them, then the second blood drawn off would likely be richer in toxin, due to the before-named current becoming established in the direction of the blood.

I hold that nourishment in no instance should be given throughout the attack. If hot water stimulants or medicine be called for, let them be administered through a nose-tube, or, better still, per rectum. Purgatives are absolutely necessary, and of other drugs the nitrites or digitalis, in connection with spartein, may, perhaps, be found useful. Hot water may be necessary when the disease has lasted for many hours, and after the second bleeding has been undertaken, or the convulsions subsided. But if given in the earlier stage of the disease it will do harm by counteracting the necessity of the blood to make good its deficiency in water by an indrawing from the tissues.

In conclusion, I suggest that it is possibly the attention to small details not considered worthy of recording that enables some authorities to show results immeasurably superior to others, though both may apparently pursue a similar line of treatment.

ART. XIV.—*A Rocky Mountain Health Resort.* By E. HOBHOUSE, M.D., M.R.C.P. San Remo.

IT may not be uninteresting to the readers of this Journal to have some description of a health resort in the Rocky Mountains, distant almost as far from New York as New York is from Queenstown; by rail, at least, it is well over 2,000 miles, though the journey can be done easily in 72 hours.

Glenwood Springs is situated on the western slope of the Rocky Mountains, towards the western border of the State of Colorado, at an elevation of about 5,700 feet above the sea, and about half way between Denver and Salt Lake City. It is a lovely spot at the junction of the Roaring Fork and Grand Rivers, whose waters join those of the great Colorado River, and run thence into the Gulf of California and the Pacific, 800 miles off. Down each of these valleys comes a railroad—down the first the Colorado Midland, and down the second the Denver and Rio Grande—which, after parting at Colorado Springs, and crossing the great continental divide at a level of ten to eleven thousand feet, here reunite.

Not twenty years ago this country was chiefly inhabited by Indians, and as late as 1878 there was a massacre of white settlers within 40 miles. Even in Indian times the Springs had a great reputation (probably it was the only form of bath the red man ever took), and up to within a few years they used to come back to bathe at times. Then came the miners and trappers and prospectors, who very soon found out their value in rheumatism—a prevalent disease amongst them—and in syphilis, and used to make hot mud baths in the open, in which they would lie for hours.

Now all is changed. About ten years ago the Glenwood Hot Springs Company bought up the springs and much of the adjoining land; they have built bath-houses, a really magnificent hotel, and constructed a swimming pool, 600 ft. long, of hot water; whilst the surrounding grounds have been beautifully laid out and planted. It is a very good example of what American energy and enterprise can accomplish in a comparatively short time.

There are several springs dotted about the valley and along the course of the river for a mile or more, of varying size, but much the same composition. The largest, the Yampa (or bear, in Indian language), which is used to supply the big pool and the main bath-house, a handsome stone building, pours out 8,000 gallons per minute of water at a temperature of 127° F., considerably charged with CO_2, and containing also a considerable amount of sulphur, as is shown by the deposits of finely precipitated sulphur on the stone work, and on the rock in the curious natural vapour caves. Whence the water comes is a mystery, about which there are many theories; but from the constancy of the temperature and of the supply, and from the fact that there is no active volcanic agency at work nearer than the Yellowstone, which is several hundred miles off, it is supposed that it must come from a great depth. The formation around is largely limestone, in which are found those caves, through which the hot water runs, producing natural vapour baths, which have been utilised for the treatment of many cases, and proved most beneficial.

The chemical composition of the water is very similar to that of Aix-la-Chapelle, and it is useful in much the same

cases, but it contains much more sodium chloride—viz., 1,089 grs. per gallon, with 13 grs. each of magnesium chloride and bicarbonate; 24 of potassium sulphate; 82 grs. of calcium sulphate, and 24 grs. of calcium bicarbonate. It is most useful in cases of obstinate syphilis, in subacute and chronic rheumatism, and, carefully used, in chronic rheumatoid arthritis.

Despite the large amount of salt which they contain the waters are largely drunk for chronic gastric troubles and constipation, and in the latter case especially have shown themselves very beneficial. It would be better, however, if arrangements were made for supplying diluted water for drinking. They produce a delightful effect on the skin, and even in eczematous conditions have not the irritating effect, which would be expected *a priori* from the presence of so much salt. In acne and allied conditions, and furunculosis, the effect is excellent; as also on many syphilitic skin lesions.

The vapour caves have been much used for years by silver miners suffering from lead-poisoning, and have a great reputation amongst them; they also are very valuable in some cases of neurasthenia and overwork with insomnia and loss of appetite, having apparently some curiously soothing effect on the nervous system. In cases of obesity, of the condition which Murchison called lithæmia, and of plethora arising from over-eating, they are of immense benefit, profuse sweating being produced at a much lower temperature than that of the Turkish bath.

The exact composition of the vapour is not certain, but in addition to the CO_2, it must contain sulphur in some form, for, as has been said, the rocky walls of the caves are covered with a fine deposit of it. Some care should be exercised in the use of both the cave and the water-baths, by those who are suffering from cardiac or pulmonary disease, or have any arterial sclerosis, or are advanced in years; and they should not be used by anyone in a very weak or exhausted condition. In suitable cases I have seen very striking results both on the skin and on the system generally. To what those results are due it is difficult to say, or rather, in the present state of our

knowledge, impossible, and it is absurd to dogmatise one way or the other. Dr. Head has shown by very careful researches (*Brain*, 1893–4) the close connection that exists between visceral disease and cutaneous areas, and it is certain that the relations are reciprocal—*i.e.*, that the skin areas may influence the corresponding viscera as much as the viscera the skin. Furthermore, Prof. J. J. Thomson has shown (*Philosophical Transactions*, 1893) that the electrical conditions of water are markedly altered according to the substances held in solution by it, and it is extremely probable that the stimulation of the peripheral nerve ending would be correspondingly modified.

I only mention these facts to show that we have no right to assert that the effects of mineral springs are due only to their being hot, plus the advantages of change of scene and air. As regards our knowledge of such subjects, we are only on the threshold, and the next few years may show surprising developments. It is certain, for instance, to one who has studied the evidence, that the results attained by Schott at Nauheim are due to some such reasons as those above stated.

In conclusion, as regards Glenwood, the best time of year at which to visit it is the summer and autumn, the latter especially being almost perfect from September onwards; the summer is hot, but, owing to the elevation, very rarely oppressive; and delightful excursions can be made into the higher plateaux between 9–10,000 ft., where the wealth and beauty of the flora must be seen to be believed in July and August. The geologist, botanist, entomologist, and sportsman, will all find vent for their energies, and fascinating problems for solution, and that amongst some of the most beautiful scenery which the world can show.

The western slope of the Rockies is not so dry as the eastern, but it is freer from very cold winds; and the cold, which in an average winter is very seldom below zero even at night, is not more felt than a few degrees of frost in England. Owing to the latitude the climate of Colorado generally is not a cold climate, though occasionally there

may be spells of severe cold; in summer there is no snow to be seen, even on the highest tops at an elevation of over 14,000 ft.; and on the eastern slope there is little snow even in winter; but it is important to remember that there is a considerable difference between the eastern and western slopes in that respect. In some cases—*e.g.*, catarrhal conditions—I believe the snow is a great advantage, as it implies total immunity from dust; this, at least, was my personal experience, as I was never so free from catarrh as in winter at Glenwood.

The climate at Glenwood is also much less stimulating than that on the eastern side, and, therefore, affords an agreeable change to those who are suffering from the effects of being too long in high regions and very rarefied stimulating air, which causes a considerable strain on the nervous system, and produces insomnia, great nervousness, and irritability. Hence those who have been long on the eastern slope, in Denver or Colorado Springs, and cannot go very far, find considerable relief by going to Glenwood, and for this as well as for other reasons, it seems to be destined to become one of the most popular resorts of the West.

ART. XV.—*The Medicine and Surgery of the Homeric Poems.* By JOHN KNOTT, M.A., M.D., Ch.B., and Dip. Stat. Med. (Univ. Dubl.); M.R.C.P.I.; M.R.I.A.; Fellow of the Royal Academy of Medicine in Ireland; Fellow and Examiner (Conj. Sch. with Apothecaries' Hall), Royal College of Surgeons in Ireland, &c.

(*Continued from page 48.*)

IN all ages and countries, the ceremonies and observances connected with the event of dissolution, and the subsequent disposal of the bodies of the dead, have been among the most important and most characteristic of their social—and even political—as well as religious, customs. As a natural necessity, *burying* must have been practised before *cremation*. Only the "nearest and dearest" are desirous to see much of one's mortal remains after death; and from even their vision the dismally

(scientifically) necessary process of decomposition soon presses onward to blot out all recognisable traces of the features so loved and so cherished during life. The instantaneous result of the operation of the hand of death is the removal of the physical qualities which make the living attractive to sight and to touch; by-and-by, when molecular disintegration has succeeded to somatic death, the olfactory—in many ways the most touchy of all our senses—gives still more emphatic counsel for the complete removal of the earthly remains of what earth had possessed of those most dear. There are comparatively few parallels in the troubled history of the Jewish race to the perfect suavity displayed by both parties during the interview in which the patriarch Abraham approached "the sons of Heth" with the request, "Give me possession of a burying-place with you, that I may *bury my dead out of my sight.*" The language is very touching and very human. I may mention, in this connection, that among the Jews, and some other typically Oriental races, the process of burning the bodies of the dead appears to have been regarded with dislike, or even horror. Lucian (*de Luctu*), in enumerating the various modes of disposing of dead bodies in his own and preceding ages, expressly assigns *cremation* to the Greeks, and *interment* to the Persians. "We read in Holy Writ that the King of the Moabites was so savagely cruel, even after death, against the King of Edom, that he took his body out of the sepulchre, and burnt his bones into lime; for which barbarous rage, upon the sacred remains of a king's body, he and his people were punished of God."—(Weever, "*Funeral Monuments.*")

After the more or less peaceable death of a Jewish king, we are told that he "slept with his fathers, and they buried him." With regard to the Roman practice, we have the very instructive evidence of Pliny: "Ipsum cremare apud Romanos non fuit veteris instituti: terra condebantur. At postquam longinquis bellis obrutos erui cognovere, tunc institutum. Et tamen multæ familiæ priscos servavere ritos: sicut in Cornelia nemo ante Syllam Dictatorem traditur crematus. Idque eum voluisse, veritum talionem, eruto C. Marii cadavere." This passage throws a flood of light upon the origin of the custom of cremation. And even in the Grecian

States the practice was by no means universal at any time. Plato (*Phædo*) makes Socrates refer expressly to both burial and burning of the dead. Eustathius, in commenting on the Homeric practice of cremation, cites a poet who introduces one of his characters declaiming against its horrible inhumanity, and calling vigorously upon Prometheus to come to his assistance, and take back to heaven from the reach of mortals the fatal gift of fire, which he had procured for them by his mischievous dishonesty, and which they had abused with a malignant perversity. The philosophers were, of course, divided in their views on this, as upon every other question of public morality. Those who believed in the quaternity of elements (*fire*, *air*, *water*, and *earth*), or even in the duality (*water* and *earth*), inclined to the practice of interment. Heraclitus and his followers, who taught that *fire* was the *first principle* of all forms of matter, advocated cremation as most consonant with the practice of nature, which tends to dispose of bodies in such a way as to reduce them as soon as possible to their original elements.

Like most other classical customs which attained to the dimensions of public importance, the origin of the custom of cremation must necessarily be traced by the Greeks to at least a semi-deified personage. Accordingly, we find that the pre-historic practice of cremation was introduced by Hercules—who was driven to end on the funeral pyre a life of glorious achievement, in order to escape from the hopeless condition of bodily torture to which he had been reduced by the well-meaning attention of a jealous wife. When the fatal tunic of Nessus had conveyed the fiery poison of the Lernæan hydra to the marrow of his bones, and all hope of alleviation of his tortures had vanished, he proceeded to inveigh with bitter imprecations against the credulity of Dejanira, the cruelty of Eurystheus, and the implacable jealousy and spite of the Queen of the Gods. Imploring the protection of Jupiter, he constructed his own funeral pyre on the summit of Mount Œta, spread out upon it the skin of the Nemæan lion, laid himself thereon as on a bed, with his head resting on his club, for his final earthly repose; and, having directed his one unfailing friend, Philoctetes, to take his bow and arrows as a parting gift, he

ordered him to apply the torch to the inflammable pile. The hero awaited the termination of his earthly sufferings with the calmness and repose of perfect philosophic fortitude. The Olympian King saw and appreciated the superhuman greatness of his son, under the most terrible of all conceivable ordeals, and announced to the surrounding deities assembled in solemn conclave, that he would raise to the skies the immortal portion of a hero who had done earth so good service by ridding it of so many monsters and tyrants. The resolution of Jupiter was applauded by the Dii Majores; a dark pillar-like cloud of smoke immediately surrounded the funeral pile; and, as soon as the combustion of the mortal portion of the hero was completed, a four-horse chariot conveyed his soul to the seat appointed for him at the council-table of the Gods. As is usual in the moment of greatest success, the feminine spite of Juno now relented; when her malignant resentment had been exhausted in vain, she wished to become his most intimate friend, and sealed the bond of amity by giving him her daughter Hebe as his heavenly bride.

When the adventurous life of Philoctetes drew to a close, he naturally wished that his mortal remains should be treated as were those of his heroic master. It is easy to understand how a practice which was so decorated by the ornamentation of poetry and fable found favour with the imaginative and hero-worshipping warriors of the Grecian republics.

Rome must, of course, have her deified heroes as well as Greece; and we accordingly find that—starting from the very beginning—after the assassination of their first king, one of the senators concerned in the murderous conspiracy displayed the diplomatic hardihood of making oath in the presence of the inquiring citizens that he himself had seen Romulus ascend into heaven. This performance was (very naturally) accompanied by the histrionic embellishments of thunder and lightning, with a hurricane and an eclipse; but the celestial traveller does not appear to have been accommodated with the convenience of a fiery chariot for his journey. The views of the founder of the Eternal City on the subject of cremation do not appear to have descended to posterity; but that it had become a recognised practice there

at a very early date is obvious from the fact that Plutarch tells us that Numa Pompilius forbade the burning of his own body. There can be little doubt that the last wishes of the Roman Moses had great influence with posterity; and we find that Sylla was the first member of the family of the Cornelii whose body underwent the process of combustion, and that it was not till after this time—that is to say, after the civil wars—that the custom began to grow general.

In his discussion of the subject in this connection, Eustathius assigns two reasons for the general favour which the practice of cremation obtained in the Grecian commonwealths. The *first* of these is that the earthy—*unclean*—body required purification by fire after the departure of the soul. To this belief Euripides refers in speaking of Clytemnæstra :—

—— πυρὶ καθήγνισται δέμας.

—*Orestes*, 40.

And it was supposed that the body of Hercules required this process of purification before his reception in the inner circle of the Olympian theocracy, and admission to the ambrosial embraces of Hebe. The *second* reason is, that the soul, being separated by the action of fire from the gross and inactive matter of the body, would be placed at liberty to take its flight to the mansions of the blessed. It appears to have been a very well-established opinion that fire was the most efficient agent for refining the spiritual part of man; by separating it from all gross and corruptible earthly matter, purifying it from its grosser qualities, and thus preparing it for a happy existence of immortality. After Scylla had been slain by Hercules, she was raised from the dead, and rendered immortal by her father, Phorys :—

——— ἣν αὖθις πατὴρ
Σάρκας καταίθων λοφνίσιν δομήσατο,
Λέπτυνιν οὐ τρεμουσαν οὐδαίαν θεάν.

Lycophron. Cassandr. 44.

The traditional termination of the life of Hercules was gorgeously caricatured in subsequent ages by the ceremony of the apotheosis of the deceased Roman Emperors. When the funeral pyre of the candidate for deification had just become enveloped in smoke from the ascending flames, an eagle was released from its artistic hiding place on the summit; and

the upward flight of the favoured bird of Zeus indicated to the gaping multitude the ascent of the immortal part of their late ruler to join the company of the Olympian oligarchy.

The inspiring influence of the Oriental ideas of the purifying powers of fire is well exemplified in the persistence of the *suttee* practice down to the present age. And we are told that, even in pre-Homeric days, the Indian philosophers, when weary of the hopes and enjoyments of this world, and impatient to try the happiness or forgetfulness of another, used to have piles erected on which they laid themselves—in Hercules fashion—to have their souls released from their earthly prisons. Quintus Curtius records the case of Calanus, who followed Alexander out of India. On finding himself indisposed (and probably disappointed, after the manner of Rasselas when he had escaped from the confinement of "The Happy Valley"), he obtained the gracious permission of that great conqueror to prevent the further development of his disease (and his discontentment), by committing himself to the flames. The regard in which this method of disposal of the heroic dead was held by the early Norsemen is shown by the custom, celebrated in the Sagas, of occasionally placing a Viking in his ship, and sending him "flaming out to sea," instead of the more usual proceeding of entombing him beneath a mound of earth in his vessel set on even keel, and surrounded by all his belongings. And, indeed, modern antiquarian research appears to have demonstrated that the graves of Northern Europe, which had been made during the "bronze age," contain no other human relics than jars filled with ashes; so that the custom appears to have been much more nearly universal among the northern nations of Europe than among those of the south. Cremation was also practised by the Celts, and Germans, as Tacitus has recorded; and we are told by Ahmed Ibn Fozlan that he was an eye-witness to its celebration among the barbarous tribes of the Volga as late as the tenth century, where it was accompanied by the horrible rites of human sacrifice, as among tropical African tribes of our own day. But the introduction of Christianity always extinguished the crematorial flames. The custom rapidly lost favour at Rome after the conversion of Constantine, and was entirely

abolished under the Emperor Gratian. It was prohibited to the conquered Saxons by Charlemagne, under pain of death. The Indian and American-Indian practices of our own age need not be more than referred to in this connection; and so of the extensive, though by no means exclusive, practice of cremation by the Japanese up to a recent period.

To return to our Homeric practice. If we try carefully to remove the manifold incrustations which were deposited around the central nucleus of this practice by the creative poetry, the speculative philosophy, and the proverbial mendacity of the Greeks, we shall, I think, incline to the conclusion that the primary consideration in popularising the custom of cremation among this warlike people was the absolute prevention of any indignity to the remains of their departed fellow-soldiers at the hands of the enemy. This, with the removal of disagreeable sights, offensive smells, possible sources of infection, and undoubted agents of religious pollution, will satisfactorily account for the preference displayed for the pyre above the grave. The first and weightiest of these reasons was that of Sylla, as recorded by Pliny in the above quotation. We shall have opportunities, as we proceed, of pointing out the importance of the other considerations in connection with the bodies of the dead. Abraham, in his own case, merely expressed the wish that he might bury his dead *out of his sight*. A dead body was a source of pollution among the Greeks as well as among the Jews. A Greek who had touched a dead body could not enter one of the temples, or take any part in the worship of the gods, till he had undergone the prescribed process of purification. Lucian, in his treatise on the Syrian goddess, tells us that if a person had but *seen* a corpse, he could not, even when purified at once, enter her temple till the next day. Persons who had been thought dead, or even *reported* dead during absence, were obliged to undergo the same ceremony. Aristinus was obliged, under such circumstances, to consult the Delphian Oracle, as to what procedure he should adopt, and was informed:—

> Ὅσσα μετὰ ἐν λεχέεσσι γυνὴ τίκτουσα τελειται
> Τόσσα μὲν ἂν τελέσαντα θύειν μακάρεσσι θεοῖσι.

"... the prophetess *Pythia* returned this answer—

"Look whatsoever women do
in childbed newly laid,
Unto their babes, which they brought forth,
the very same I say
See that be done to thee again:
and after that be sure,
Unto the blessed gods with hands
to sacrifice, most pure.

"Which oracle thus delivered, Aristinus having well pondered and considered, committed himself as an infant new-born unto women for to be new washed, to be wrapped in swadling cloaths, and to be suckled with the breast-head: after which, all such others, whom we call *Hysteropotmous*, that is to say, whose graves were made, as if they had been dead, did the semblabl."—Plutarch. *Roman Questions* (*Holland's Trans.*).

After the funeral procession, or presence of a dead body, the house underwent a process of purification (disinfection). When Ulysses had slain Penelope's suitors, and removed their bodies from his house, he called out to his old nurse—

Οἶσε θέειον, γρηύ, κακῶν ἄκος, οἶσε δὲ μοι πῦρ,
Ὄφρα θεειώσω μέγαρον.

—*Odyssey*, XXII. 481-2.

Fetch brimstone hither, Nurse, and Fire, that I
My tainted dwelling-house may purify.

The joyful messenger swiftly obeyed, and—

Ηνεικεν δ' ἄρα πῦρ καὶ θήιον· αὐτὰρ Ὀδυσσεὺς
Εὖ διεθείωσεν μέγαρον, καὶ δῶμα καὶ αὐλήν.

With fire and sulphur, cure of noxious fumes,
He purg'd the walls and blood-polluted rooms.

—*Pope.*

Livy refers to the similar process of disinfection used by the Romans—"Habet et in religionibus locum ad expiandas suffitu domos." The hygienic practices of the Jews are known to have been very elaborate; and one of the terrors which, according to Bildad the Shuhite, were in store for the wicked man, was that "brimstone shall be scattered upon his habitation" (Job, xviii. 15). Some have thought this language to indicate a fate like those of the habitations of the "Cities of the Plain;" but many of the best critical commentators have explained the passage as a prophecy of the disinfecting use of sulphur, under circumstances similar to those referred to.

It is well known that, at least in times of peace, the Greeks conducted the elaborate ceremonies connected with the disposal of the dead with the most scrupulous care and attention. The dead were held sacred and inviolable, even among the most barbarous contemporaries of the classical Greeks and Romans; and the treatment of their bodies with disrespect was looked upon as a greater and more unpardonable sacrilege than even spoliation of the temples of the gods.

We are informed, on the authority of Diodorus Siculus, that Pluto was the first who instructed the Grecians in the due performance of the ceremonies connected with dissolution and the subsequent disposal of the bodies of the dead. Accordingly, this historic fact furnished the materials to the rhapsodists and fabulists from which they built up for this hero a boundless empire in the subterranean regions, and constituted him supreme monarch of all departed souls. When we consider that during the barbaric ages of unceasing warfare the duties payable to the dead were considered of far greater religious importance than those which were exacted by the living, and that the neglect of them constituted a far darker and more heinous crime than almost any that could be committed against their surviving neighbours, it is not surprising that the name of the deceased Pluto was soon placed upon the list of the *Dii Majores*.

When the hour of dissolution approached, supplication was made to Mercury, whose function it was to convey the ghosts of the departed to the bank of the Styx. In the moment of death, the nearest relation endeavoured to inhale the last breath of the dying; the same person afterwards closed the eyes and the mouth of the departed, and removed any rings worn on the fingers. The ghost of Agammemnon is made to complain bitterly of the neglect of his wife, Clytæmnestra:—

> —— οὐδέ μοι ἔτλη ἰόντι περ εἰς Ἀΐδαο
> Χερσὶ κατ' ὀφθαλμοὺς ἑλέειν, σύν τε στόμ' ἐρεῖσαι.
> —*Odyssey*, XI. 425.

The *face* was then *covered*: the dying Hippolytus is made by Euripides to call upon his father to perform that office for him:—

> Κρύψον δέ μου πρόσωπον ὡς τάχος πέπλοις.

Before the body was cold, the *limbs* were *arranged*—"laid out"—to their full length. In the same play, the maid, as soon as Phædra had expired, calls out for some of her own sex to perform that office:—

'Ορθώσατ' ἐκτείνοντες ἄθλιον νέκυν,
Πικρὸν τόδ' οἰκούρημα δεσπόταις ἐμοῖς.

After this, probably as soon as rigidity had set in, the *body* was *washed.* Special cases are recorded where the washing was done by persons on the approach of death, when there was reason to anticipate negligence afterwards. Socrates washed himself before death, *to save the women so much trouble.* Euripides makes Alcestis to wash herself in the river on the approach of the fatal day on which she was to lay down her life for her husband:—

'Επεὶ γάρ ἥσθεθ' ἡμέραν τὴν κυρίαν
'Ηκουσαν ὕδασι ποταμίοις λευκὸν χρόα
'Ελούσατ,'——

When the washing was over, the body was *anointed* with oil:—

Καὶ τότε δὴ λόεσάν τε, καὶ ἤλειψαν λίπ' ἐλαίῳ.
—*Iliad*, XVIII., 350.

(*To be continued.*)

ART. XVI.—*Modern Tendencies in the Treatment of Disease.*[a]

By ALFRED R. PARSONS, M.B., B.A., Univ. Dubl.; F.R.C.P.I.; Physician to the City of Dublin Hospital.

DISEASE, active or potential, is around us on all sides. As physicians we endeavour to restore to health those who entrust their lives to our hands. Our duty and highest ambition, where possible, so far as in us lies, is to cure disease. But before we can successfully treat any abnormal condition we must recognise or diagnosticate the morbid state; before we can hope to scientifically prevent or cure disease we must know its cause. John Stuart Mill has defined the cause of any phenomenon to be the unconditional, invariable antecedent; such an antecedent may consist of one or more elements. The factors in the causation of disease are exceed-

[a] Being the Presidential Address, inaugural to the Session of 1895-96, delivered before the Dublin University Biological Association.

ingly complex, and difficult to determine; but notwithstanding this, in no era in the history of medicine has there been displayed such activity in the detection and isolation of these unconditional and invariable antecedents as during the past twenty years. It is not contended for a moment that all the antecedents of which any given disease is the effect have been elucidated. On the contrary, competent bacteriologists readily admit that there are other factors in the causation of disease than those hitherto detected. Of what these factors may be we can form only tentative opinions; but, notwithstanding our lack of any exact knowledge concerning them, we are in a position to-day to affirm that there can be no tubercular process, whether it manifest itself as consumption, tabes mesenterica, or "white swelling," without the Bacillus tuberculosis; to assert that one of the unconditional invariable antecedents in the production of that disease, which till recent years devastated the fairest pasture lands of France, is the Bacillus anthracis; and, with almost equal certainty, to state that in the Klebs-Lœffler bacillus, and in Kitasato's bacillus, we have one of the *sine quâ nons* in the production of diphtheria and tetanus respectively. What has been done in the elucidation of the ætiology of these diseases has, with varying degrees of certainty, been done for several of the other infective processes. The causation of many of the ills to which the human flesh is heir is still most obscure; but if the past two decades are in anywise a harbinger for those to come, we shall not have long to wait for another stage in the removal of the opprobria of scientific medicine.

Increased knowledge of the causation of disease, and the pathological processes produced by it, must, of necessity, considerably affect our methods of treatment. That the more exact and precise our knowledge of any morbid process is, the more competent we should be to treat it, is a proposition which seems to me to be so self-evident that I would not delay to mention it were I not aware of an opinion occasionally expressed among students, implying that there is some antagonism between a scientific knowledge of disease and its successful treatment. We hear, for example, that Dr. A is very good for diagnosis, but give me Dr. B for treatment; or, again, that Dr. C is a good scientific physician, but he is

not practical; or, as it is sometimes put, "he comes to the bedside with his hands tied." From such phrases one would be led to conclude that diagnosis and treatment were isolated and independent, instead of being most intimately connected. But the idea that an exact or scientific knowledge of disease is incompatible with its successful treatment, while empiricism and want of precision are the royal road to a brilliant future, is fast dying out. The struggle between science and empiricism in the practice of medicine is daily growing less and less—*Magna est veritas et prœvalebit.* Slowly medicine is emerging from that condition which Bacon animadverted on, "the natural state of the sciences, while their cultivation is abandoned to practitioners—not being carried on as a branch of speculative inquiry, but with a view to the exigencies of daily practice—and the *fructifera experimenta* therefore being aimed at, almost to the exclusion of the *lucifera.*"[a] To-day, in hundreds of laboratories, the brightest intellects of our time, regardless of immediate results, devote themselves to the performance of *lucifera experimenta.* They labour, and it is our duty and privilege to enter into the fruits of their labour. Medicine, handicapped though her disciple must always be by the personal equation, the idiosyncrasies of our patients, and the difficulty of arriving at a determination of the antecedents in the case under investigation, is gradually coming from under the dark cloud of two thousand years' empiricism, and taking her place among the natural and experimental sciences.

In the evolution of therapeutics we can, to a greater or less degree, recognise the three stages through which, according to Comte, every branch of knowledge passes—(1), the supernatural or fictitious; (2), the metaphysical or abstract; (3), the positive or scientific. With the first stage we have little concern at present; it is still met with amongst savage nations who use their charms, amulets, and incantations in the treatment of disease. Occasionally, in isolated and remote parts of the country, even in this the last decade of the nineteenth century, we hear of cures and charms which look like survivors of this first period. As regards the second and third stages, it seems to me that to-day we

[a] John Stuart Mill. A System of Logic. London, 1879.

stand at the meeting of the ways, We are in a condition of transition, passing from stage two to three. Only one or two centuries ago therapeutics lay buried in the deepest empiricism; treatment was characterised chiefly by setons and issues; burnings, bleedings, blisterings; draughts composed of combinations of innumerable drugs, if happily one might accomplish the desired effect; an age in which the physician has felt the lash of the withering sarcasm of the poet and philosopher, and has been described as one who put drugs of which he knew little into a stomach of which he knew less. For years there was, and probably under then existing circumstances could be, no improvement in therapeutical methods. Can we wonder if at such a time unorthodox schools originated, if men dared to think for themselves, if heresy and schism divided the ranks, and if from the mother-school unfitly termed allopathy, homœopathy and hydropathy broke loose. To these somewhat irregular branches of our profession orthodox medicine owes much. Homœopathy has at least taught us the course which nature, untrammelled by drugs, takes in accomplishing her cure; and from hydropathy we may learn that in spite of the acute eczema produced on some part or other of the body by the continual application of wet compresses—which the bath attendant is generally careful enough to inform the patient is the "bad" being drawn out of the system—we may learn that in many cases of diseases, functional or organic, complete rest from business or professional anxieties and change of scene, combined with suitable diet, may do more to restore the shattered health than all the drugs in the Pharmacopœia.

The results obtained by these unorthodox schools, together with the rise of rationalism, which has not left untouched traditional beliefs in medicine any more than in religion, have compelled physicians to pause and weigh the benefits of recognised lines of treatment. We view the results, not in the light of a hypothetical humoral pathology, but in the clear cold rays of bacteriology. Empiricism has dominated medicine for nigh on twenty centuries, and what has she done to place the treatment of disease on a firm scientific basis? Since Galen's time (140 A.D.) it has been laid down that a physician's business was not to treat his patient's

disease but the patient himself, and this aphorism has recently received the approbation of one occupying a very high place. We have been treating, and still are recommended to do so, not the disease but its symptoms.

We cannot blame our times or those of our ancestors for any lack of zeal in their quest for new drugs. The animal and vegetable kingdoms have been ransacked; we have peeled the bark from trees on the side of the Cordilleras, and scraped the fungus from the humble rye. The bowels of the earth have been forced to yield up their common and their precious metals; the laboratory of the chemist, with all its analytical and synthetical processes, has been placed at our disposal. And what is the sum total of the record of 2,000 years' empiricism, of the millions of therapeutical experiments made during that period—what are the results? How many diseases can we honestly cure by drugs?—the courses of how many can we shorten? For how many have we found the specific antidote in any or all of the drugs of the Pharmacopœia? Such a question demands a reply, and the most, I fear, we can claim, in the light of modern ætiology, is that, as the result of these uncountable therapeutical random shots, we have scored one bull's eye.

Since 1660 Peruvian Bark—termed Cinchona by Linnæus after the Countess of Chinchon, who introduced it to Europe—or its alkaloid, quinine, has been administered with brilliant results in the treatment of malaria. Its *modus operandi* was entirely unknown till within the last few years. Recent investigation has demonstrated that malaria is produced by a minute organism, which is found in the red blood-corpuscles, gradually increases in size, breaking down the hæmoglobin into pigment, produces spores, and causes an exacerbation of the fever by each discharge of its spores. On this organism quinine exerts such a destructive action that, in many cases of malaria, it can no longer be detected by an examination of the blood. Hence, unawares, we have inadvertently stumbled on a specific. But what a record! A striking demonstration of the futility, yea, impossibility of attempting to cure disease without any exact knowledge of its causation. At such a rate, according to the calculations of our geologists—

> "All mortal shapes must melt in gloom,
> The sun himself must die"—

long before specifics for even a tithe of the diseases with which we are surrounded could be discovered.

But please do not misunderstand me. Empiricism has had her reward. She has accomplished that which she set herself to do. I freely admit that, from the experience of twenty centuries, we have learned to relieve much that makes sickness so trying, to bring temporary relief to some of the pangs of suffering humanity, to rob death of many of its physical terrors. To weary minds and bodies, fever-tossed, we can give what we, perhaps, euphemistically call sleep—that is, we can depress the higher cortical centres so that they cease to respond to irritants. We can relieve pain by paralysing the nerve fibres, the spinal cells or tracts, or the receiving centres in the brain. We can temporarily relieve the febrile headache and lower the elevated temperature by the exhibition of certain drugs which, presumably, have a more powerful action on the temperature regulators than the poisons which still course through our patients' blood. An irregular frequent heart becomes slow and regular for some time under the action of certain powerful cardiac poisons—the cardiac tonics—which summon forth some of its reserve energy. We can irritate our jaded gastric glands so that an increased quantity of digesting fluid is formed, and food, which nature in her wisdom would probably have rejected, is more or less digested.

We stand aghast at the heroic measures of our forefathers who, for the relief of symptoms, bled their patients till they could well bleed them no more; or, in the belief that alcohol was the panacea for all abnormal states, administered it till the patients were either drunk or dead; or in dealing with the sthenic type of disease, gave tartar emetic till the patient was in a condition bordering on collapse. But are not we working along the very same lines, and is it not probable that succeeding generations will wonder at us for the haste with which we relieve symptoms with powerful alkaloids and poisonous coal-tar derivatives, giving little regard to the effect which such treatment is calculated to have on the course of the disease itself. In proof that the more thoughtful minds of the profession are commencing to question the advisableness of active interference with the *symptoms* of disease, let me

quote to you a passage from Sir William Broadbent's address at the recent Annual Meeting of the British Medical Association :—"It was inevitable," he says, "that we should be greatly struck by the remarkable power of lowering the temperature possessed by the antipyretic class of drugs. We seem to have within our reach the means of dealing with our most formidable enemy, and it is a great triumph to be able to point out to friends the effect of our remedy on the temperature chart, especially when it has been accompanied with relief of headache and other symptoms. Here it is very important that we should maintain an attitude of cool observation, and not conclude that in bringing down the temperature we have necessarily exerted a favourable influence on the course of the disease. We may have been bringing down also the patient, and it is not so certain that nature does not know her business when she sets up febrile reaction." To this pregnant statement of Sir William Broadbent let me add two facts derived from experimental investigation. (1.) Almost all pathogenic bacteria cease to develop at a temperature above 104° F.; and (2) animals inoculated with organisms and treated with antipyretics succumb, while others, under precisely similar conditions, to whom no drugs are administered recover.

Or, again, what scene is more harrowing to the relatives or trying to a physician than to stand by the bedside and watch his patient in the grip of an attack of uræmic convulsions or puerperal eclampsia. Chloroform will almost at once stop off the movement, and, instead of the horrible grimaces, the frothing at the mouth, the distended veins, the more or less violent struggling, we have a perfect silence broken only by the sighing respiration of the sick one. What a marvellous change! What a striking improvement! But what have we really done? By the chloroform we have so powerfully depressed the higher centres, that, though the motor nerve cells are still bathed in precisely the same poisonous fluids as a few moments before, they are now incapable of response to the stimulus, and not only have the higher motor centres been depressed, but the cardiac and respiratory centres have likewise suffered. Many observers have been satisfied with the temporary apparent improve-

ment, but those who look below the surface have felt that it has or may cost too high a price. Some here to-night were possibly present at a recent meeting of the Obstetrical Section of the Royal Academy of Medicine, when the treatment of puerperal eclampsia was under discussion, and will remember Dr. Smyly's observation with regard to the use of chloroform (I quote from memory):—"We have ceased using chloroform at the Rotunda in the treatment of puerperal eclampsia, because we found it often killed our patients by producing cardiac paralysis."

Must we not learn that in the symptomatic treatment of disease we do not necessarily exercise any influence whatever on the morbid process; and, secondly, the possibility that by too active treatment of symptoms we may produce an effect the very opposite to what we desire. We have each of us possibly often put to ourselves the question which an irritable old Scottish Laird, who was suffering from an attack of gout, when, as he said himself, he ought to be on the moors shooting, put to Dr. Abernethy as he was examining his foot:—"What, mon, are you always tinkering with my toes for; why don't you strike at the root of the disease?"

As physicians, I think, we will all agree that our main object should be to strike at the root of the mischief, to neutralise or eliminate the *materies morbi* rather than to so depress our tissues as to render them incapable of demonstrating the presence of irritants.

This century has seen a wonderful development of the natural and experimental sciences. The Darwinian hypothesis has profoundly modified the conception of the biologist, and opened up new fields of investigation. The chemist, by the synthesis of urea, has succeeded in breaking down the barrier, once thought impassable, between organic and inorganic substances, and found in the chemistry of the carbon compounds material worthy of his highest analytical and synthetical abilities. The physicist has in some directions almost annihilated time and distance by electricity, and determined the composition of the sun's atmosphere by the spectroscope. Such an extraordinary activity in the scientific world has had its effect on medicine and the allied subjects. Anatomy has become more exact, physiology has

greatly enlarged her borders, pathology and pathological histology are studied with more zeal and care, and bacteriology in 20 years has practically developed into a science. The foundations are laid more accurately and firmly than before, and it is not too much to expect a corresponding improvement in the top stone and entire structure. All are, I think, agreed that clinical diagnosis has become much more accurate and precise. But has our treatment of disease been commensurate with improvements in its diagnosis? As our ætiological and pathological knowledge increased, the benefits which had been anticipated from drugs in the cure of disease have become more and more remote, and attention was concentrated on placing the patient in the best possible condition for the struggle against the invaders.

We cannot now realise the brilliant daring of Gull and Sutton, who, dissatisfied with the antiphlogistic lines of treatment in vogue in their time, ventured to treat rheumatic fever with milk diet and no drugs, and demonstrated that its duration under such circumstances was no longer than under the more heroic measures of their colleagues. Thus was inaugurated what has been erroneously termed the tentative method in the treatment of disease, as if a physician's only aid in the treatment was the administration of drugs.

One of the therapeutical tendencies of to-day is to attach greater importance than ever to the hygienic surroundings of our patient. Instead of the darkened room, the closed windows, the carefully-screened door, lest, perchance, a draught might enter, the air of the sick chamber close and oppressive, we believe in a bright, cheerful room, with sunlight and an abundance of fresh air, open windows, and a sufficient amount of cubic air-space. In oxygen and the more refrangible rays in the violet half of the spectrum we have active bactericidal agents. Koch found that tubercle bacilli are killed on exposure to direct sunlight for a time varying from some minutes to a few hours, according to the thickness of the layer. The typhoid bacilli, according to Jankowsi, cannot survive 4 to 7 hours of direct sunlight, and similar results have been obtained with anthrax and cholera bacilli, and with the Bacillus coli communis. "Catching cold" and chill no longer occupy the chief place in our

catalogue of the ætiology of disease, notwithstanding a recent writer, who describes "cold" as the predominant factor in the production of the following diseases :—Croup and tetanus, acute rheumatism and locomotor ataxia, diabetes and pneumonia, acute nephritis and infantile paralysis. The position which cold and chill have occupied in the past in the causation of disease is due to the fact that one of the earliest symptoms at the commencement of many serious affections is a chill, a shivering, or a pronounced rigor, and an apparent antecedent has been magnified into a cause. Prolonged exposure to cold may, however, act as a predisponent by reducing our resistance to the micro-organisms with which we are surrounded ; but even here, owing to Nature's marvellous mechanism for keeping the deeper organs at their proper temperature, even when the surface is exposed, the risk is very slight. Nature has provided us with no such means for combating the injurious influences of impure air. Ill or well, we may expect to be liable to modifications in temperature, and we have a defensive mechanism against such ; but ill or well, we ought to have plenty of pure air, for against the impure we have no protection. Yet the fear of "catching cold" is far from being exorcised from the public mind, though there is a growing trust in the disinfecting and deodorising properties of oxygen and sunlight.

Diet.—To-day probably more than ever it is the physician's duty to attach great importance to the regulation of the diet in disease, and in doing so each case must be treated on its merits. In health one can probably place entire reliance on two tests with reference to any individual article of food. Do you like it? Does it agree with you? And often in disease there are no better criteria ; but in some affections, particularly those with local lesions of the alimentary canal, or in diabetes, the patient's taste can no longer be gratified as regards either the quantity or the quality of the food. To the Dublin Schools belongs the honour of having first recognised the importance of the administration of food to fever cases, and by feeding fevers Graves has gained for himself universal renown. A liberal supply of cold water is a great boon to the parched lips and tongue of feverish patients, and to fathom the arguments which led our fore-

fathers to refuse a drink of cold water in such cases is difficult. In milk we have one of the staple foods of disease. Would that we could always be certain of its purity. Much might be done to prevent the dissemination of infective disease by the removal of all dairies to suburban districts, and to check the spread of tuberculosis, which causes almost 15 per cent. of the total mortality in all large cities, by frequent examination of the cows by a competent veterinary surgeon. Investigation has demonstrated that the udders of cows are particularly liable to tubercular disease; virulent tubercle bacilli have been found in the milk of such animals, and infected milk is probably mainly responsible for that form of tuberculosis which so frequently attacks the alimentary canal of young children. Personally, if the milk can be obtained pure I much prefer it to the many food preparations intended for young children and the sick.

Nursing.—Our novelists, particularly Dickens in his immortal Sarah Gamp, have given us a picture of the attendants in the sick chamber till within the last thirty or forty years. But mainly through the exertions of Miss Florence Nightingale the whole scene has been transformed. Instead of an aged, unkempt hag, we feel the skilled and sympathetic hand of youth—one ready to cool the fevered brow; to smooth the wrinkled sheets; to arrange the pillows for a tired head, and by her bright and genial presence to inspire hope, "than which there is no better physic for sick bodies."

That skilled nursing met a great want has been demonstrated by the extraordinary rapid strides which it has made during the past ten years. To-day the trained nurses of the United Kingdom are to be counted by thousands. Yearly physicians attach growing importance to skilful nursing in the treatment of disease, and one feels that with a thoroughly competent nurse in fighting against one of the acute infectious diseases the battle is half won. So much depends on the skill and watchfulness of the nurse that it seems that the period of her training in hospital under supervision should be at least two years. In England many are trained in the hospital for three years. In Ireland very few institutions train their nurses for even two years, and none,

so far as I know, for longer than that period, before sending them out to nurse private patients.

When the records of the nineteenth century come to be written up, and its attempts to relieve suffering humanity estimated, there will be few brighter pages in its history than that describing the introduction and education of trained nurses available for rich and poor.

(*To be continued.*)

NEW METHOD OF STAINING FLAGELLA.

Robert L. Pitfield, M.D., recommends (*Medical News*, Philadelphia, LXVII., 10) the following method of staining flagella:— (*a*) Saturated aqueous solution of alum, 10 c.cm.; saturated alcoholic solution of gentian-violet, 1 c.cm. (*b*) Tannic acid, 1 gm.; distilled water, 10 c.cm. The solutions should be made with cold water, and immediately after mixing the stain is ready for use. The cover-slip is to be carefully cleaned, the grease being burned off in a flame, and after it has cooled the bacteria are spread upon it, well diluted in water, care being taken to exclude culture-medium. After the preparation has been thoroughly dried in the air it should be held over the flame with the fingers, as Loeffler has directed. Afterwards the stain is gradually poured on the slip and heated gently, bringing the fluid almost to a boil; the slip covered with the hot stain should then be laid aside for one minute, then washed in water and mounted. Upon examination, the bacteria both isolated and in clumps, will, if motile, be found to have the flagella clearly and delicately defined. In the middle of the cover-slip, as well as around the edges, the bacteria will be found equally well stained; the clumps being surrounded by a zone of delicate fringing flagella, each being well stained and distinctly outlined from its fellows.

SLOBBERING.

Dr. Sanchez de Silvera, we learn from *Lo Sperimentale*, has not thought this homely subject unworthy of study, and he has written an essay upon it. From the observations of Dr. Couëtoux (of Nantes) and his own, he concludes (1) that healthy infants never dribble; (2) that infants which dribble only in the day-time, though apparently in good health, have their digestive functions impaired; (3) that infants which dribble at night are suffering from obstruction of nasal respiration to a greater or less degree; (4) that "these phenomena are altogether unconnected with dentition."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A History of the Chronic Degenerative Diseases of the Central Nervous System. By THOMAS KIRKPATRICK MONRO, M.A., M.D., Fellow of the Faculty of Physicians and Surgeons of Glasgow; Assistant Physician to the Glasgow Royal Infirmary; and Pathologist to the Victoria Infirmary of Glasgow. Glasgow: Alex. MacDougall. 1895. 8vo. Pp. 82.

DR. MONRO has conferred a boon on the medical profession and on students of medicine in compiling this interesting history of the "chronic disorders which depend upon primary degenerative changes in the structure of the central nervous system." The essays—nine in number—which compose this work formed part of the author's graduation thesis in the University of Glasgow, and are reprinted, with but slight alterations, from the *Glasgow Medical Journal* for 1895.

Each essay is introduced by a list of the designations which have been applied by different writers to the disease, the history of which it narrates.

The diseases with which the several essays deal are, in their order—Tabes dorsalis, primary spastic paralysis, ataxic paraplegia, hereditary ataxy, progressive muscular atrophy, bulbar paralysis, ophthalmoplegia, the peroneal type of muscular atrophy (Howard Tooth), and disseminated sclerosis. The author purposely leaves out of consideration two diseases—primary optic atrophy and general paralysis of the insane—which might, he thinks, from many points of view be regarded as belonging to the group of chronic degenerative diseases of the central nervous system.

There is one refreshing novelty about the book, to which the author draws attention in his introductory

remarks. We refer to the footnotes, which are signed with the initials "W. T. G." It appears that when Dr. Gairdner, in his capacity as Professor of Medicine in the University of Glasgow, was examining Dr. Monro's thesis, he annotated it, thinking that it might interest Dr. Monro to read his criticisms when the thesis again came into his hands. These annotations are reproduced as footnotes with Dr. Gairdner's permission. One of the most interesting of these footnotes will be found at page 47. It describes the erroneous diagnoses made in the year 1861 by four eminent London physicians in the case of an old Scotch professor, the subject of progressive muscular atrophy, the clinical features of whose illness were recorded by Dr. Gairdner, while Dr. Lockhart Clarke reported on the morbid anatomy of the case. The latter, perhaps, shares with Luys the honour of the discovery of degenerative changes in the cells of the anterior cornua of the spinal cord in progressive muscular atrophy. Luys's paper, which appeared in 1860, was entitled "Atrophie musculaire progressive. Lésions histologiques de la substance grise de la moelle épinière" (*Gaz. Méd. de Paris*, 1860, page 505). Some doubt, however, exists as to whether either Luys's case or Dr. Gairdner's case was really one of genuine progressive muscular atrophy. Luys's case was one of muscular atrophy in the left arm, the right being scarcely affected. In Gairdner's patient "severe pain was one of the most clamant symptoms"—a fact which throws some doubt on its genuineness. The changes observed after death included pigmentation of the cells of the anterior horns. We have taken the trouble to look up the original account of the case, which was published in Dr. Lionel Beale's *Archives of Medicine*, October, 1861. The patient, aged 65 years, suffered about five years before his death from neuralgic pains in the balls of the thumbs, which soon extended to the forearms and arms. After some months marked weakness of the hands was apparent, as well as wasting of the muscles of the thumbs and index-fingers, which became habitually bent towards the palms, while subsequently the hands were flexed on the wrists, and the forearm pronated. Latterly the patient

complained of the most intense pain in the arms and hands and throughout his body. At the autopsy some shrinking and granular change of the right third nerve and some granular alteration of the wasted muscles were found. Mr. Lockhart Clarke detected in the posterior gray substance of the spinal cord unnaturally transparent streaks, patches, or spots occupied by a granular substance. These spots were most numerous about the middle of the cervical enlargement. In one of them a vacant space was found, with broken ends of nerve-fibres projecting into opposite sides of the space. Around the central canal of the cord and the medulla oblongata, and in the spinal anterior and posterior commissures, there was a considerable deposit of corpora amylacea.

Surely the foregoing clinical facts point to multiple neuritis rather than to progressive muscular atrophy as the disease which was really present. There is no mention of any microscopic examination of the peripheral nerves, but we may take it as extremely probable that they would have been found diseased like the nerve-fibres in the spinal cord.

The historical facts brought forward by Dr. Monro in his very clever essays are full of interest. They serve to impress upon the memory the leading features of the various diseases to which they refer, and they form a graceful tribute to the reputation of the great men, past and present, whose researches have thrown a flood of light upon the nature and symptoms of the chronic degenerative diseases of the central nervous system.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections. Edited and Annotated by J. J. PRINGLE, M.D., F.R.C.P. London: The Rebman Publishing Company. 1895.

In our editorial notice of the first part we sufficiently indicated the scope and nature of this superb Atlas of Skin Diseases. It is only necessary to repeat that the illustrations are photo-lithochromes from models in the museum of the Saint Louis Hospital, Paris, most of which models have been executed by the master-hand of the

famous artist, M. Baretta; and that the explanatory text is by the physicians to the Saint Louis Hospital, MM. Ernest Besnier, A. Fournier, Tenneson, H. Hallopeau, and Du Castel. The work is brought out with the co-operation of M. Henri Feulard, Curator of the museum of the hospital, and of M. Léon Jacquet, acting as Secretary.

The photo-lithochromes in the present fasciculus represent lupus erythematosus of the face, of the erythemato-follicular variety, from a patient under the care of M. Hallopeau; hypertrophic rosacea of the forehead, or acneiform frontal pachydermatosis, from a patient under the care of M. Besnier; circinate syphilitic lesions of the skin, confluent and cockade-shaped, from a patient under the care of M. Georges Thibierge, acting for M. Besnier; and xanthoma planum et tuberosum in a glycosuric, icteric, and obese subject, from an out-patient under the care of M. J. Darier.

Needless to say Dr. Pringle has done his editorial work well. His annotations on the different cases are particularly able and instructive. This second instalment of the work sustains the reputation of the first, and is full of promise of as good things to come in future fasciculi.

The Johns Hopkins Hospital Reports. Report in Pathology. IV. Deciduoma Malignum. By J. WHITRIDGE WILLIAMS, M.D. Baltimore: The Johns Hopkins Press. 1895. Pp. 44.

THIS part of the Johns Hopkins Hospital Reports is entirely occupied by a monograph on a remarkable kind of tumour, the *deciduoma malignum.* Dr. Williams first describes a case which came under his own notice. A negress died, three months after delivery, of septicæmia and a large sloughing tumour in the labium, through which a fistulous opening extended into the rectum. After death a large tumour was found involving the uterus, with metastases in the vagina and many other more distant parts. A minute description is given of the naked-eye appearances and those revealed by microscopic examination, the latter

being illustrated by an admirably executed plate. In the following passage the results of this examination are summed up:—

"We have to deal with a very remarkable new growth, which cannot readily be classed among any of the well-known tumours occurring in the uterus. The greater part of the original tumour, as well as the metastases, is made up of blood, which lies either free in the tissues or enclosed within cavities formed by the tumour cells, while its cellular part is composed of large elements, some of which appear as epithelial cells (?) and others as larger or smaller masses of syncytium. Nowhere in the tumour can any trace of blood-vessels or reticulum be discovered, and it appears to be composed solely of epithelial cells (?) and masses of syncytium, which are grouped together with apparently no attempt at tissue formation, but which lie free in areas of hæmorrhage without apparent integral connection with the surrounding tissues.

"The metastases present the same characteristics, and appear to be thrombotic or embolic masses of cells, which multiply in the vessels and cause their rupture, with consequent hæmorrhage into the surrounding tissue. In these hæmorrhagic areas the cells live on and multiply until they form masses too large to be nourished simply by osmosis, when they undergo necrotic changes. Accordingly, the oncological interpretation of the tumour is no easy matter, not to speak of the difficulties involved in positively settling its histogenesis."

From a discussion of these two latter points the author is inclined to think that the syncytial elements of the tumour are derived from the outer layer of the chorionic villi, which layer consists not of separate cells but of a continuous mass of protoplasm with embedded nuclei, or of a syncytium. This layer he holds is not of fœtal but of maternal origin, being, in fact, derived from the epithelium of the uterus and of its glands. As to the cellular portions, he argues that they are not of connective-tissue nature from the absence of intercellular substance and of blood-vessels. They can consequently be derived neither from the deciduum nor from the stroma of the chorionic villi. He argues that they are really not cells at all but portions of the syncytial tracts cut across, while he does not absolutely deny the possibility that some of them may

be derived from the fœtal ectoderm, or even from the decidua cells.

He concludes that, notwithstanding the many peculiarities which it presents, the tumour is derived from maternal epithelium, and is most fittingly designated as a carcinoma.

In a review of all the more or less similar cases which have been recorded, Dr. Williams points out the great variety in the nature of the tumours which have been called malignant deciduomata, or to which cognate terms have been applied, and, he thinks, that while this name is the most convenient to employ, it should be used purely for convenience in clinical work, and should not be supposed to imply that the growths are all of identical anatomical structure. In fact some of them are sarcomata, some carcinomata, and some mixed tumours. Up to the present 25 cases have been recorded as belonging to this group of tumours. Four of these are doubtful, while five tumours described under other names should be classed with them, thus making 26 cases which, at least from a clinical stand point, should be classed among the malignant deciduomata. As regards the ætiology, all the cases followed pregnancy, and a very large proportion followed hydatidiform moles. Thus of the 26 cases 11 followed hydatidiform moles, 6 full-term pregnancies, 5 followed abortion, 1 a tubal pregnancy, and in 3 the form of pregnancy is not definitely stated.

Several observations are on record which show that it is possible for chorionic and perhaps decidual elements to make their way into venous channels and reach remote portions of the body, either during or just after pregnancy, in conditions which have nothing to do with tumour formation. In the same way, in the case of the tumour, the early occurrence of metastases may be accounted for.

As regards the symptoms, the hæmorrhage following molar or other pregnancy, and vaginal metastases, uncommon in ordinary carcinoma uteri, are of importance. Curettement should be performed immediately, and the portions examined microscopically, since it is only at an early stage that any good results can follow operation,

which should be a total removal of the uterus and appendages. So far some cases have been operated on in this way. Four recovered from the operation, one was well three months, and another nine months after the operation; but, although the operation has so far not given very brilliant results, "it is the only chance of saving the patient's life, and should be resorted to as soon as a diagnosis is made, if metastases are not already present."

One of the most noteworthy points in this very valuable and able monograph is the complete review of the literature of the subject. A list of 68 papers and works is given, and most of these are fully noticed in the text.

The Diseases of Children: Medical and Surgical. By HENRY ASHBY, M.D. Lond., F.R.C.P., Physician to the General Hospital for Sick Children, Manchester, &c.; and G. A. WRIGHT, B.A., M.B. Oxon., F.R.C.S. Eng., Assistant Surgeon to the Manchester Royal Infirmary, and Surgeon to the Children's Hospital. Third Edition. London, New York, and Bombay: Longmans, Green, & Co. 1896. 8vo. Pp. 814.

WE hail the appearance of the third edition of this standard work in its own department, and we congratulate the authors on the success with which their book has met. The first edition was published in 1889, the second followed in 1892, and now comes the third in 1896.

In their brief preface the authors tell us that the whole work has been thoroughly revised, and some of the sections, more especially those on Infant Feeding, Anæmia, and Chronic Heart Disease, have been almost entirely re-written. Considerable additions have been made to the surgical part, and in it the more valuable improvements in treatment introduced since the date of the last edition are duly noticed. The book is enlarged by over fifty pages (814 compared with 757). The formulary has been much expanded, and fourteen new woodcuts have been added.

There is little to criticise in the generally sound clinical teaching of the authors of this excellent text-book. In its

pages, however, we do not find any reference to that *bête noir* of anxious parents, "night-terrors," or to its treatment. These should certainly find a place in the medical part of the work. Under the head of "Convulsions" again, Graves's most valuable clinical observations on "infantile convulsions" and their treatment by oil of turpentine are overlooked. We give the authors a reference to Graves's *Clinical Lectures on the Practice of Medicine*, reprinted by the New Sydenham Society in 1884. (Vol. I. Pages 666 *et seq.* Lecture XXXVIII.) We quite agree with Drs. Ashby and Wright that the effect of antifebrin and of phenazone (antipyrin) in reducing temperature in scarlet fever "is temporary only, and they are apt to be accompanied by considerable depression of the heart." The authors say these drugs "*may* be used," but why give them at all? We have seen cyanosis follow a dose of 3 grains of phenazone in a case of pneumonia in a child aged five years. We are also not a little surprised to read, "The former (that is, antifebrin or acetanilide) may be given in 3 to 5 gr. doses in sherry or tincture of orange peel, as it is insoluble in water." These excipients—or, to use a better word, vehicles—seem to be scarcely suited for children of tender years.

In December, 1889, and in December, 1892, we favourably noticed the former editions of the work before us. We are happy to think that this third edition fully maintains the reputation of what we consider to be a well-written and admirable text-book of children's diseases.

Medical and Surgical Report of the Children's Hospital, 1869–1894. Edited by T. M. ROTCH, M.D., and HERBERT L. BURRELL, M.D. Boston, U.S.A. 1895. Pp. 367.

WE strongly commend this carefully edited and beautifully printed book to the profession generally, and to specialists in children's diseases most especially. "Orthopædic" specialists will find it eminently useful. It contains a record of twenty-five years' experience at the Boston Children's Hospital, arranged in three divisions—Administrative, Medical, and Surgical—the last occupying more than half of the volume,

and being profusely illustrated. We shall briefly notice some of the papers in the Medical Section of the Report.

From a paper on malaria in children by Dr. Edward M. Buckingham, we learn that "malaria is a new disease in Boston"—malaria being used by the author to express what we should call malarious fever. In recent years it has established itself in Boston and the neighbourhood, and it is increasing. The record contains but 23 cases, however, among in-patients and out-patients of the hospital. Study of these cases shows that the type of the disease in children is different from the ordinary adult type. The stages of the paroxysm are less strongly marked, the cold stage especially being often slight or replaced by other "nervous phenomena." The hot stage is the most constant.

Dr. Charles W. Townsend contributes an interesting paper on the ætiology of chorea, founded on all the cases treated in the out-patient department from 1883 to 1891. They numbered 148—3·6 per cent of the total—61 males; 87 females. All being under the age of puberty, the preponderance of girls is attributable to differences in constitution and habit of life rather than to sex. Mental pressure at school is regarded by the author as a frequent cause of chorea—eye-strain, due to hypermetropia and astigmatism, is another. It is probable that "chorea, in predisposed cases, especially if it has occurred before, may be started up by some reflex irritation, as by strain on imperfect eyes, as in one of my cases, by the reflex irritation from an ear-ache, or, as Dr. Jacobi has shown, by nasal irritation." Only five cases in the records are attributed to fright. In one case excessive tea-drinking appeared to be "partly responsible."

Several pages are devoted to the connection between chorea and rheumatism and endocarditis. It appears that in the 148 cases reviewed, there was cardiac murmur in 30 per cent., rheumatism in 21 per cent., organic heart disease in 14 per cent. Of 21 cases of organic heart disease, 15 were rheumatic. "Certainly, at least, one-half the cases of chorea were free from rheumatic history." Dr. Townsend gives a remarkable illustration of the connection which undoubtedly exists between chorea and rheumatism. "The mother is subject to rheumatism; out of eleven children, three have had chorea,

two of these having had rheumatism, one with endocarditis, and permanent heart injury in addition. The third choreic patient had heart disease, but no history could be obtained of articular rheumatism. Of the remaining 8 non-choreic children, one only has had rheumatism, and she also has heart disease." Chorea may be followed by organic cardiac disease, without articular rheumatism; and in some cases rheumatism following chorea occurred first *after* the heart had been damaged.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Vol. XVI. W.—Zythus. Washington: Government Printing Office. 1895. Large 8vo. Pp. xiv. + 822.

Alphabetical Lists of Abbreviations of Titles of Medical Periodicals employed in the Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. From Volume I. to Volume XVI., inclusive. Washington: Government Printing Office. 1895. Large 8vo. Pp. 282.

These two volumes complete the first series of the Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. The work reflects undying glory on the name of John S. Billings, Deputy Surgeon-General and Lieut.-Colonel, U. S. Army. In presenting the sixteenth and closing volume of the Index-Catalogue to General George M. Sternberg, Surgeon-General, U. S. Army, Dr. Billings writes:—"This is probably the last volume of the Index-Catalogue which will be issued under my personal supervision, and, in closing the work, I can only say that it has been to me a 'labour of love,' and that I am very thankful that I have been allowed to complete it, so far as the first series is concerned."

The manuscript of a second series, including all the titles of books and articles received too late for insertion in the first series, has been prepared, and will probably make five printed volumes of the same size and style as those constituting the first series.

The volume before us—XVI.—includes 12,759 author-titles, representing 4,857 volumes and 11,613 pamphlets. It also contains 8,312 subject-titles of separate books and pamphlets, and 13,280 titles of articles in periodicals.

The Index-Catalogue, as far as it has been already published, contains 176,364 author-titles, representing 85,663 volumes and 151,504 pamphlets. It also contains 168,557 subject-titles of separate books and pamphlets, and 511,112 titles of journal articles. These figures will show the magnitude of the Index-Catalogue and the immense value which attaches to it as a work of reference.

The "Alphabetical List of Abbreviations of Titles" will be of far-reaching usefulness as a guide to the names of medical and scientific publications in all parts of the globe. No similarly comprehensive list exists in any other medical work with which we are acquainted. Dr. Billings has placed the whole Profession of Medicine throughout the world under a debt of obligation to him by his masterly and scholarly achievement, which is unique in the history of medical literature.

The Medical Digest, or Busy Practitioner's Vade Mecum. Appendix, including the years 1891–2–3–4, and to August, 1895. By RICHARD NEALE, M.D. Lond.; Member of the Dutch Medical Society of Batavia, Java. London: Ledger, Smith & Co., St. Mary Axe. 1895. 8vo. Pp. 206 + xxi.

THE Appendix to Dr. Neale's most useful and monumental work carries it on from the year 1890 to August, 1895. Each section corresponds with the section of the same number in the edition of 1890. To make proper use of the Appendix, the index to that edition must first be consulted for a given subject, and then the corresponding section in the Appendix should be referred to see if fresh matter has been added. If the 1890 index does not refer to the subject sought for, the index to the Appendix, in which new subjects alone are noted, should be consulted. The author hopes to incorporate a second, and probably a third, appendix with the present instalment, in order to

facilitate reference. As it stands the work is invaluable as a book of reference to the busy practitioner, for whose advantage indeed it was originally designed. There are a good many misprints, which should be corrected by careful proof-reading in a future edition.

The price of the Appendix is half a guinea, but the publishers have brought out the complete work, embracing the literature of 55 years (1840 to 1895, inclusive), for the moderate sum of eighteen shillings and sixpence, post free.

The New Sydenham Society. Vol. CLIII. *An Atlas of Illustrations of Pathology.* Fasciculus X. Diseases of the Testis (Part II.). Plates XLVII. to XLIX. With additional Letterpress by J. HUTCHINSON, Jun. London: The New Sydenham Society. H. K. Lewis. 1895.

THIS is an interesting fasciculus of the New Sydenham Society's Atlas of Pathology. It contains three chromo-lithographs and several woodcuts. Plate XLVII. illustrates a case of round-celled sarcoma, or lympho-sarcoma, of the testicle. In Plate XLVIII. hydrocele of the tunica albuginea, malignant tumour of the testis from a boy aged two years, and hæmorrhagic sarcoma of the testicle are represented. Plate XLIX. shows a misplaced testicle in the perineum.

Mr. Hutchinson, jun., gives an account of the chief diseases of the testis, especially those which have been illustrated in the present and the preceding fasciculi. His article is a valuable monograph on the pathology of the testis.

Leçons de Thérapeutique. Par. G. HAYEM, Les Médications. 4ème Serie. Paris: G. Masson. 1893.

THIS is the fourth, and happily the concluding, volume of a bulky treatise which Professor Hayem has brought out. The work represents the lectures which the Professor delivered to his summer and winter classes for some years past in the Faculty of Medicine at Paris. The volume before us deals with the treatment of gastric affections, of cough

and pulmonary complaints, of albuminuria and uræmia, and the therapeutics of sweating. The greater part of the book is occupied with the consideration of the therapeutics of dyspepsia; and the author has here incorporated the results of his own experiments upon the chemical pathology of digestion. The style of writing is diffuse.

HOSPITAL REPORTS.

The Middlesex Hospital, W. Reports of the Medical, Surgical, and Pathological Registrars for the year 1894. London. 1895. Pp. 406.

Thirty-First Report of the Trustees of the Boston City Hospital, with Report of the Superintendent, the Medical and Surgical Statistics, Rules for Admissions and Discharges, Prospectus of Training-School for Nurses, Rules for the Convalescent Home, &c., for the year February 1, 1894, *to January* 31, 1895, *inclusive.* Boston. 1895. Pp. 162.

A COMPARISON of the Reports of these two important hospitals is not favourable to the cis-Atlantic production, which is made up of statistical tables and summaries of cases. There is absolutely no attempt to deduce practical conclusions from the year's experience of an hospital accommodating 275 patients; there is no information as to income or expenditure, diet or nursing, or other subjects of great interest to the profession. The Report of the Middlesex Hospital, carefully printed on inexpensive paper, is most creditable to the industry and accuracy of the medical, surgical, and pathological registrars; but we should gladly barter a few pages of statistics for a discussion on the Abuse of Hospitals and the Way to End it.

The Report of the Boston City Hospital (constructed to accommodate 500 patients, and *made* to hold 540 on a pinch) is much more communicative and much more interesting; more comfortable to read, and more likely to be useful to the profession. In it, too, however, the pressing question of abuse of medical charities is ignored; although one phase of the abuse is more rife in America than with ourselves. "Private room and ward paying patients" contributed more than £3,000 to the income of

the hospital in 1894. "The private rooms for patients have been occupied nearly all the year, and in the surgical services the demand for such accommodations has been larger than ever before."

The cost to the municipality of dieting each in-patient averaged a trifle over £2 a week. Each patient in the convalescent home cost $6.35 weekly. 1,060 patients (0·123 per cent.) died in hospital during the year. Of these 388 (0·045 per cent.) died within 48 hours of admission, and 266 (0·031 per cent.) died of diphtheria. The absence of epidemic enteric fever from Boston is remarkable. Only one case was treated in this hospital in 1894. In the Middlesex Hospital during the corresponding period there were 79 admissions for this disease, with 27 deaths. On the other hand the London hospital received only 48 cases of diphtheria, with 12 deaths. The following passage suggests imitation :—

"The hospital has long had a library for patients, but it was old-fashioned, and the books had gradually become badly worn. It was kept in the administration building, and the size of the hospital made it practically inoperative, and it had fallen into disuse. The Goodnow Library Fund had accumulated, until there was a balance on hand of $854.01. Instead of renewing the old library, the plan was adopted of putting in each ward a special library. Eighteen libraries of about sixty volumes each, in special bookcases easily accessible, have been placed in nearly all the wards. We have endeavoured in selecting the books to afford a miscellaneous reading adapted to the patients in each ward. The books are designed chiefly for diversion and entertainment of the sick, and partly for instruction. The cost of these ward libraries was $794.69."

A Manual of Dental Education, with some Notes upon the Modern Curriculum of the Dental Student. By ARTHUR TURNER, L.D.S., &c. Edinburgh: E. & S. Livingstone. 1895.

THE author has compiled this *brochure* with a view of laying before the public the advantages to be gained by, as also the expenses, course of study, &c., required of, such

as would become dental practitioners. It would, perhaps be out of place to discuss in detail here the scheme of the book, suffice it to say that any who may be contemplating dentistry as a profession for themselves or their children will herein find an excellent guide. There is really a great deal of information contained within these 72 small pages, and that too in a readable form, free from technical terms, and fully reliable, as well as up to date.

HEAD PRESENTATION IN LABOUR.

Dr. Davison argues (*Glasgow Medical Journal*, June, 1895) that the reason why infants usually present by the cephalic extremity is that it is the presentation accompanied by much the smallest mortality in unaided parturition, and that therefore in the course of evolution children presenting thus have generally survived, and so the presentation has been handed down. Dr. Davison illustrates this by the way in which the heads of curval hymenoptera point to the exit from the place of deposition.

HYPNOTISM.

In the course of an interesting paper, contributed to the *New York Medical Journal* by Mr. T. J. Hudson (author of *The Law of Psychic Phenomena*), on the subject of "the status of hypnotism in criminal jurisprudence," the following passage occurs:—"Professor Liébault discovered and formulated the law of suggestion. That law is now almost universally recognised by scientists throughout the civilised world as *the* potent factor in hypnotism. I say "almost," for there are still a few exceptions, consisting of a constantly diminishing number of the followers of the late Professor Charcot, who believed that hypnosis could be induced only in hysterical patients. There is one other French "scientist" who succeeds in astonishing himself and amusing the scientific world by the production of phenomena which demonstrate nothing but his own ignorance of the principle of suggestion. Then there is one English author who recently produced a universal guffaw in the scientific world by publishing an *exposé* of the Frenchman, and succeeded in astonishing all Europe and America by demonstrating the fact that he knew less about the subject than the Frenchman himself. With these unimportant exceptions the law of suggestion is universally recognised among scientists." Who can this English author be?

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

CLINICAL RECORDS.

A Case of Rupture of the Uterus.[a] Reported by J. B. Tighe, Student of Medicine.

The subject of my paper is rupture of the uterus. A similar case was brought before this Society some time ago, but as the occurrence is as serious as it is rare, statistics showing that it occurs only about once in 4,000 cases of labour, and the mortality being estimated at 90 per cent., I hope the matter will not, on this occasion, be entirely devoid of interest.

I wish simply to lay before you my personal experience of a case of labour, complicated by this grave and unusual accident, the signs of which, when once seen, can scarcely be forgotten, merely mentioning in passing a few causes such as—fatty degeneration of the parts, malnutrition, and obliquity of the uterus, which especially predispose to rupture. Obstruction to the passage of fœtus, existing in any part of the genital canal, which nature is unable, if unassisted by the accoucheur, to overcome, may also bring about the condition, particularly in those who are the subjects of any of the predisposing causes mentioned.

The woman to whom I refer in these pages was a primipara, about thirty-five years of age (according to Bandl, of all the cases of rupture recorded 11 per cent. only occur in primiparæ). In appearance she was wasted and anæmic. Her health had, for three months previous to her confinement, been poor. She was, during that time, unable to perform even her household duties, and her husband had to rely upon the kindness of his neighbours to cook his meals, as his wife never rose from bed before twelve o'clock noon or one o'clock in the afternoon.

I was called to see her at seven o'clock in the morning, and found that she was—in honour of the occasion, I suppose—walking about the room awaiting my arrival. On inquiry I

[a] Read at the January meeting of the Medical and Scientific Society, Catholic University School of Medicine.

learned that she was gone full time, and that labour pains had begun at two or three o'clock on that morning. After a few minutes in the room, even before I had made any examination, I was struck by the apparent severity of the pains, which occurred at frequent and regular intervals. On examination I was able to satisfy myself that the woman was in the first stage of labour, that the presentation was a vertex, and that the child was alive. Having given the usual directions, I left the case, intending to return about twelve o'clock. Before that time a messenger came to the hospital asking for my immediate attendance. I went with all possible speed, and found that the woman, on my arrival, was not in the second stage. The pains were regular, and of the same severe character as on my previous visit. At about one o'clock the second stage was reached, the membranes were intact, and labour seemed to be following a normal course. At half-past two the membranes ruptured, the head being well down in the pelvis at the time. After that event labour seemed to make very *little*, though it undoubtedly did make *some*, progress. An enema of soap and water was administered, but did not in any way improve the condition of things. The woman was now under my constant observation, and it was evident that the cessation of advance was not due to the absence of the pains, which continued as before. The temperature and pulse were frequently recorded, but it was not until a quarter to six, that is about four and three quarter hours after entry into the second stage, that any indications that interference was necessary manifested themselves. Temperature then reached 100·2°, and the pulse 90, the woman at the same time showing signs of exhaustion. I sent for Dr. Barry. About ten minutes before he came the patient, who was lying on her left side, turned on her back and said—"It's alive, anyhow, doctor, I felt it kick."

If any of you have been sitting in a silent room for a long time, in which a clock has been monotonously ticking, and the pendulum suddenly ceases to swing, you have, no doubt, experienced a peculiar sensation. After a few minutes you become aware of a change; you cannot at once make out what it is, but it quickly dawns upon you. Somewhat in the same way it dawned upon me that the moans, which I had been listening to for hours, had ceased; the room, which a few moments before had been filled with the patient's cries, was now almost silent, the stillness being only broken by a plaintive, feeble voice asking, "Will I soon be well"? I have little doubt that the rupture took place about this time. The patient lay on her back, not com-

plaining of any great pain, but large beads of perspiration stood upon her forehead, her breathing was shallow, the features were drawn, the eyes closed, and every sign of collapse was evident. On taking the pulse I found it small, feeble, and numbering 120. On examination per vaginam, the head of the fœtus occupied the same position as before. I then passed a catheter, and made all preparations for immediate delivery. I had just finished when Dr. Barry arrived. He auscultated for the fœtal heart, but it could not be heard; the forceps was at once put on, and the head brought down. Taking off the blades in the usual manner, it was found that the uterus was unable to do its work and expel the child, so the forceps was again applied, and the child delivered, not showing any signs of life.

On placing the hand on the abdomen, the hard, characteristic feel of the uterus was absent; marked tenderness on the right side was present, and as the bladder had but lately been emptied, suspicion was aroused. Dr. Barry introduced his hand through the vagina, discovered a tear on the posterior surface of the uterus, extending upwards almost to the fundus; his hand met mine, which was applied externally to the abdominal wall, and he found the placenta, which he at once removed, in the abdomen, lying over the stomach. The hæmcrrhage through the vagina was slight, not more than usually occurs after a normal labour. The pulse rate was 130. Ergot was administered, and stimulants in small quantities; hot water bottles were placed to the feet, and under this treatment the patient, after a little time, rallied somewhat from the severe shock. Nothing in the way of operation could at that time be attempted, the surroundings and the condition of the woman rendering any such procedure out of the question. Administration of ergot was continued, and a little iodoform gauze inserted into the vagina. After a couple of hours I left the case, pulse being then 115, and temperature 98°. The next morning I visited the patient. She had spent a restless night, had not slept, and complained of severe pain in the right side. The abdomen was distended, and tenderness on pressure was especially marked at the seat of pain; temperature was normal, and the pulse 100. I visited at intervals of three hours during the day, the condition remaining somewhat the same, temperature, however, rising towards evening to 100·4°.

It was decided after consultation to remove the patient to hospital, and perform laparotomy. This was accordingly done. On opening the abdomen a rent was found in the posterior uterine wall, somewhat to the left of the middle

line, extending from cervix to fundus, and also involving the peritoneum for that distance. Porro's operation was considered advisable—the uterus was taken away, all blood clots removed, and the abdominal cavity washed out. The usual treatment after such an operation was carried out; the patient was supported by enemas of brandy and egg, given at frequent intervals, opium being administered internally. She survived thirty hours, pain being absent from the time of operation, and then succumbed to shock, combined with some peritonitis.

Such was the end, I regret to state, of the case, which I have endeavoured to put briefly before you. In many points it differs from the account usually found in books—notably in the non-occurrence of pain at the time of rupture—the non-recession of the head, and in the absence of any marked danger-signals which one would expect to give warning of such a serious complication. It is also curious that the pain complained of on the day following rupture was on the right side, while the rent in the uterus was on the left side. The only circumstance which attracted attention during the early part of labour was the severity of the pains—that fact, to my mind, suggesting the rapid termination of the patient's suffering, rather than the fatal ending which was destined to supervene. The pulse and temperature were normal up to twenty-five minutes of the cessation of the pains, which, no doubt, corresponded with the parting of the uterine walls, and the expulsion of the placenta into the abdominal cavity. The child was delivered considerably within one hour from the appearance of what we may now call the premonitory symptoms (*i.e.*, the rise of temperature to 100° and the pulse to 90), but which then, I think you will agree, were not calculated to give rise to any anxiety on the part of the attendant.

HISTORY OF THE IRISH FAMINE.

An authentic narrative of the principal events of the Irish famine, 1846–7—and of the following years—with a sketch of the present condition and future prospects of the congested districts in the South and West of Ireland, by W. P. O'Brien, C.B., is now in the press, and will be shortly published by Messrs. Downey & Co., London. It is proposed to issue the book at the price of 10s. 6d., and it will much facilitate the preliminary arrangements if those who may desire to become subscribers for it will be good enough to forward their names and addresses to W. P. O'Brien, Esq., C.B., Tudor House, Monkstown, Co. Dublin.

REPORT OF A COUNTRY DISPENSARY.

By Langford Symes, Kiltegan.

Statistics of the public health of any clearly defined district are of great interest and value when accurately and carefully compiled. They appear to be exceedingly rare, and of country localities I am not aware that any accurate Reports exist, or are published regularly. This can be well understood when the difficulties and obstacles which daily present themselves to the compiler are estimated, for many are the interruptions which are liable to occur, and so falsify the results obtained. Three hundred and sixty-five consecutive days of accurate noting of the cases observed is also somewhat difficult, since the diagnosis of each case must be gone into with especial care and recorded at the time. These Reports should not be entirely without their interest, for without such data it is impossible to form any estimate of the relative frequency of diseases, or even the comparative health of one year with another.

A Report was drawn up similar to this one by the author for the year 1894, but in some respects it was incomplete, and so it was deemed inadvisable to publish it, though containing very interesting matter. Of course it must follow of necessity that the greatest interest in statistics of this kind is confined more or less to those well acquainted with the locality in question, but there are points also which may be of use to others, whilst to those having no relation to such matters an apology is tendered should they come across them.

The district to which this Report refers lies on the western slopes of the Wicklow Mountains, and extends from their highest and most eastern peak at Lugnaquillia summit—3,039 feet above sea-level—down to the valley of the Slaney on the west, which at Baltinglass Church in the next district, reaches only an elevation of 394 feet. This district is divided by the natural conformation of the country into two very distinct parts. One, a moderately flat, undulating table-land or elevated plain, from 600 to 700 feet high, begins at the bases of a chain of high surrounding mountains, which form a perfect semicircle to its north and east. On the south side this plain is abruptly walled in by the sudden rise to a great height (2,145 ft.) of Keadeen Mountain, which latter, with its rocky and still more southern neighbours, Carrig, Mucduff, and Slievereagh, occupies the exact centre of the district at large. This

plain, so remarkably shut in, and known as the Glen of Imaal, is thus almost a complete circle open only in three directions—west, south-west, and south-east. The second division of the district is the irregular and undulating slope to the southward from this central column of mountains, and towards the south-west from those more distantly situated to their eastward, and belonging to the high main range of Lugnaquillia. Thus this part of Wicklow is that which protrudes to the westward into Kildare, and lies overlapping considerably the north-eastern corner of Carlow, sloping with sudden and varying declivity from the top of Lugnaquillia (the third highest point in Ireland) to the flat plains of Carlow in the south-west, whose fertile lands its streams continually water.

It is an oval-shaped piece of country about fourteen miles long in a north-east direction (Knocklishen School to Table Mount) by twelve miles wide (Eadestown to Kilcarney) in the south-east diameter, statute measure by road. As a bird flies on the map it is twelve miles by nine in these same diameters. The three longest diameters intersect each other on the summit of the central mountain of Carrig, nearly 2,000 feet above sea-level. The area is 44,636 statute acres, extending into the two counties of Wicklow and Carlow—41,976 acres in Wicklow and 2,660 in Carlow—and comprises within its outline portions of 3 baronies, 7 parishes, 8 electoral divisions, and 163 townlands. The population estimated in 1891 was 4,191, being 3,750 in Wicklow and 441 in Carlow. Thus in comparison with other districts it is far above the average size, being the fourth largest in Leinster.

Some idea of the peculiar formation of the district can best be gathered from the observation that of the mountain peaks within its precincts there are no less than 22 which are over 1,000 feet in height. Seven of these points exceed 2,000 feet, while one of the seven is over 3,000. To the southward of this hilly district the village of Kiltegan lies sheltered and wooded beneath the rocky heights of Carrig (2,000 feet), at an elevation of 523 feet.

With such a conformation the watersheds of this locality are easily understood. They are, in the main, divided into two distinct systems by the sudden rise of Keadeen and Carrig Mountains, in the very centre of the district, to upwards of 2,000 feet, being thus divided into a northern and southern basin. One river, the Slaney, emerges from the former, while two smaller ones (the Derreen and Douglas) drain the southern portion.

The streams flowing into the northern circular basin of the Glen of Imaal from the surrounding columns of mountains unite to form the Slaney, which rapidly assumes a large size, and with difficulty

finds exit from this plain through its western gate. Once over the edge of this table-land it flows with great rapidity down the inclining valley to the S.S.W. by Stratford and Baltinglass. Its highest apparent source is in the "*north Prison*" of Lugnaquillia Mountain.

From the southern slopes of the central column of mountains (Carrig, Keadeen, and Mucduff) the water runs due south in much smaller quantity to form the Douglas River, which, keeping a more or less southerly course throughout, eventually enters the Slaney through the medium of the third remaining river, the Derreen, into which it flows further down in Carlow. From the western slopes of the high range of mountains bounding the lower or southern half of the district on the extreme east, and from the eastern sides of the central column, the water flows in several streams due south, which, after a distance of some two miles, amalgamate to form the Derreen. High up, like the Slaney, it is a tortuous mountain torrent, but lower down winds with great difficulty through a flat-bottomed valley towards the south. Outside the precincts of the district, and in the Co. Carlow, it is joined by the second river (Douglas) from the central column, and together they enter the Slaney below the town of Tullow. Thus the Slaney is, in the main, composed of the water flowing from the enormous watershed of the Wicklow Mountains in the Kiltegan district.

Geologically this mountainous locality, lying as we see on the western slopes of the Wicklow range, is composed almost entirely of granite rock. Into its hills and picturesque recesses there extend from the neighbouring plains of Kildare and Carlow, which lie stretched beneath it and to the westward, two long processes of the limestone gravel of which these counties are in the greater part composed. There is one of each of these veins situated on either side, north and south, of the central cones of Carrig and Keadeen. That to the north enters the mountains through the valley of the Slaney, and passes in to the circular glen of Imaal to near its mountains slopes. It here covers the townlands of Snugborough, Ballinclea, Seskin, Knockannarigan, Coolmoney, Ballyrusk, Kilbruffy, Gibstown, and Davidstown. This limestone gravel lies superimbedded to a varying depth upon an underneath bed of solid granite. In this northern portion of the district the granite formation suddenly ceases at its western confines in Davidstown, while those townlands outlying further west in the adjoining district are composed of lower Silurian, upon which, with some exceptions, the limestone lies. To this superimposition of gravel upon lower Silurian the townlands of Ballyhook, Eadestown, Ballinacrow, and

Tuckmill form four exceptions, no limestone predominating in these localities.

The second bed of limestone gravel which is found in this portion of Wicklow overlying the granite appears as a funnel-shaped prolongation from the Carlow beds, entering from the west at Kilmurry and Red Wells. It rapidly dwindles, however, to a narrow neck at Fort Granite, and following up the little valley of Englishtown, expands again at Barraderry to include the townlands of Danesfort, Fiddan, High Park, Crossnacole, and Kiltegan.

It further appears that the tops of all the highest mountains are not granite, but are said to be composed of mica schist. Thus the summits of Ballinard, Sugarloaf, Knocknamunnion, Lugnaquillia (Percy's Table), Ballineddin, Slievereagh, Keadeen, Boleycarrigeen, and Coolinarrig are of this nature; while quartziferous porphyry is found on Blackpits, Sugarloaf, Percy's Table, and Keadeen. Some greenstone ash is observed running through Coolinarrig and Kill, while greenstone diorite exists in the mountain valley of Cornaan and Slievereagh, along the source of the Derreen River.

Of superstitions met with by the practitioner of medicine in this district there appear to be remarkably few, considering the mountainous and remote parts of some of its recesses. Modern school-teaching, the better housing of the labouring classes, and the railway and telegraphic communication are influences which steadily tend to stamp out those primitive ideas so firmly rooted in years gone by in this country, and so lamentably prevalent even still in some of its more distant south-western counties. A few, however, still remain with considerable tenacity—*e.g.*, the only cure for "zona" or "herpes zoster" is by hundreds of the people declared to be the application of "Keogh's blood." This is conducted as follows:—The patient's friends travel sometimes miles to the houses of some one of the name of "Keogh," whose wife was also originally of that name; one of the family is bled at the bedside of the patient and the blood rubbed over the herpetic eruption. This, it is believed, cures "the shingles" as no other remedy can. It is, of course, a harmless procedure, except, however, to those undergoing the depletion. The superstition with regard to the treatment of whooping-cough is, that a donkey is brought to the house, and the child suffering from the disease is made to walk under the donkey two or three times. Meanwhile the donkey is given a loaf of bread to eat, and whatever crumbs it leaves are carefully gathered up and boiled in milk and given as a curative dose to the afflicted child. Jaundice again is a subject of very particular interest. There are said to be but two "cures." One consists of a powder,

with a bitter taste, concocted of herbs gathered upon the mountains; but the other is no less an obnoxious compound than that of earthworms boiled in milk, which is administered to the patient with great solemnity. Cold water in a basin is frequently placed underneath the bed of patients suffering from bedsores, and if done in time it is still believed by some that it prevents their occurrence; also it is so used in cases of hæmorrhage (*post partum*) and erysipelas. On the whole, therefore, this part of Ireland at present is tolerably free from superstitions and mysterious remedies. As in other places, the water from various holy wells is largely made use of.

The neighbourhood is tolerably rich in antique remains, and there are a large number of relics of a bygone age throughout the district. Raths, holy wells, Druidical circles, forts, castles, churches, and caves here and there appear in some cases wonderfully well preserved, and most of these of an age to be counted by centuries rather than years. There would seem to be about 24 raths, 7 holy wells, 1 Druidical circle, 1 fort or castle, 4 old churches and convents, 7 graveyards, 1 cave, and 1 headstone and chair of St. Bridget, all distinct and fairly well preserved. There are no fossil localities.

The produce of the district is not remarkable in any way, beyond the fact that where agriculture is so difficult in the mountainous and boggy localities, the people chiefly direct their energies to sheep-farming, these forming the main live stock in these parts. Amongst the poor and those who occupy the smallest holdings fowl-rearing is exceedingly profitable, as some of the best markets in this part of Ireland are held but a few miles distant. Constant supplies are being drafted into the towns, and even the poorest therefore have a ready means of livelihood if managed with thrift.

Turf is the fuel of the country, coke or coal being used only near the towns, or in the neighbouring counties, where special kinds of hearths and fans are fitted for the purpose.

There are 11 schools within the precincts of the district in question, and the number of children receiving instruction at the various places can be gathered from the annexed table, which, through the courtesy of the several teachers, I am enabled to append. The school returns below are for the year ending September 30, 1895, and are placed consecutively in the order of size. No. 12 is on the borders, but is largely fed by the inhabitants of Kiltegan district.

—	On the Books			No. of Distinct Families Represented	Average Attendances			Religions			
								R. C.		I. C.	
	Boys	Girls	Total		Boys	Girls	Total Average	Boys	Girls	Boys	Girls
1. Rathcoyle -	79	69	148	61	48·7	49·8	98·5	78	69	1	—
2. Tinnaclash -	72	59	131	24	45·3	33·0	78·3	68	58	4	1
3. Talbotstown -	56	65	121	57	38·9	37·0	75·9	56	65	—	—
4. Seskin -	38	35	73	33	15·9	18·7	34·6	35	34	3	1
5. Davidstown -	26	25	51	25	20·5	18·8	39·3	25	25	1	—
6. Knocklishen -	23	28	51	16	12·6	15·1	27·7	21	28	2	—
7. Knockannarigan -	20	22	42	16	12·0	14·0	26·0	—	—	20	22
8. Kiltegan -	19	21	40	16	11·5	12·5	24·0	—	—	19	21
9. Rathdangan -	16	16	32	12	12·7	12·8	25·5	—	—	16	16
10. Fortgranite -	11	16	27	9	5·2	9·6	14·8	—	—	11	16
11. Kilranelagh -	13	7	20	10	8·2	4·8	13·0	—	—	13	7
Total, all Schools -	373	363	736	269	231·5	2261	457·6	283	279	90	84
12. Donoughmore -	21	19	40	14	8·5	9·7	18·2	—	—	21	19

A return of this kind will occasionally be of the utmost service to the medical officer of health, and indeed more particularly so to the sanitary authorities themselves, did they avail themselves of its opportunities. Probably no more simple and easy method exists than this for the distribution of literature, public notices, or registration, or sanitary regulations. Without any difficulty, even here, 269 different and distinct houses can be reached through the 736 children attending schools. In country districts, especially in remote parts of Ireland or Great Britain, the schools afford an excellent means of direct communication with distant houses.

Coming to the work done in this dispensary, some abstracts from the medical officer's annual return may be of interest. From these returns I find the following record of cases attended to during the last ten years. Errors are liable at all times to creep into such returns as these from various causes; but, one year with another, this table may fairly represent the number relieved. The numbers for 1895 are, however, strictly accurate, having been specially prepared for this Report.

Returns for Ten Years ending September 30th in each Year.

Year	Nnmbers attending Dispensary	Visited at their houses	Total	Vaccinations	Dangerous Lunatics
1886	104	61	165	88	2
1887	122	60	182	61	4
1888	115	117	232	83	1
1889	102	82	184	80	3
1890	96	102	198	75	2
1891	107	55	162	58	—
1892	133	135	268	89	3
1893	87	85	172	60	3
1894	122	105	227	81	—
1895	244	110	354	75	1

For complete year 1895, ending December 31st, upon which this Report is based, there were 391 different cases, presenting 425 distinct diseases. These cases are classified as follows:—

Classification of Cases, 1895.

Fevers (60).

Influenza	48
Whooping-cough	7
Typhus fever	2
Enteric fever	2
"Gastric fever" of childhood	1

Constitutional Diseases (51).

Rheumatisms (34)—	
Lumbago	15
Muscular R.	10
Acute articular R.	5
Chronic ,,	4
Anæmia	5
"Lithæmia"	3
Struma	3
"Marasmus"	2
Pernicious anæmia	1
Idiopathic dropsy of face	1
Purpura hæmorrhagica rheutica	1
Goître	1

Respiratory (59).

Bronchitis (25)—	
Chronic	10
Acute	7
Subacute (catarrh)	8
Pneumonia	6
Asthma	5
Quinsy	4
Pharyngitis	4
Dry pleurisy	3
Phthisis	3
Hay fever	2
Pleurodynia	2
Pleuropneumonia	1
Pleuritic effusion	1
Nervous respiration in left lung	1
Œdema of lungs	1
Reflex cough	1

Urinary (6).

Dysuria	4
Bright's disease	2

Circulatory (43).

Mitral disease	17
Cardiac dropsy	7
Cardiac asthma	6
High arterial tension	5
Fatty degeneration of heart	2
Tachycardia	2
Angina	1
Abdominal aneurism	1
Syncope	1
"Tobacco heart"	1

Digestive (95).

Dental caries	32
Dyspepsia	18
Constipation	11
Vermes	7
Intestinal colic	4
"Biliousness"	3
Dysentery	3
Intestinal irritation	3
Cirrhosis of liver	2
Gumboil	2
Cancrum oris	2
Acid diarrhœa (infants)	2
Malignant tumour of mesentery	1
Acute gastritis	1
Malignant disease of liver	1
Chronic enteritis	1
Tormina	1
Eliminative diarrhœa (old men)	1

Nervous (24).

Neuralgia	6
Sciatica	3
Hysteria	2
Neurasthenia	2
Vertigo	2
Epilepsy	2
"Headaches"	2
Disseminated spinal sclerosis	1
Acute mania	1
Hypochondriasis	1
Paraplegia	1
Hallucinations	1

Cutaneous (11).

Eczema	3
Scabies	3
Acne	1
Phthiriasis	1
Herpes	1
Strophulus	1
"Ringworm"	1

Reproductive (22).

Confinements	6
Abortion	3
Hydrocele	2
Amennorrhœa	2
Pregnancy	2
"Climacteric flushing"	1
Vicarious menstruation	1
"Sore nipples"	1
Prolonged lactation	1
Retained placenta	1
Prolapsus uteri	1
Milk fever	1

Surgical (35).

Wounds of face	3
Ulcers	3
Contused ribs	2
Poisoned wounds	2
Paraphimosis	1
Orchitis (sympathetic)	1
Dislocation of head of radius	1
Morbus coxæ	1
Fractured clavicle	1
Dupuytren's contraction of fingers	1
Ranula	1
Tenosynovitis	1
Fistula in ano	1
Phlebitis	1
Colles' fracture	1
Fractured ribs	1
Strumous glands	1
Sympathetic bubo	1
Carbuncle	1
Whitlow	1
Buccal fistula	1
Fractured fibula	1
Onyxis	1
Contused scapula	1
Contused hip	1
Severed radial artery	1
Hernia (inguinal)	1
Scalp wounds	1
Prostatic retention	1

Eye (11).

Conjunctivitis	3
Corneal ulcers	2
Pannus	1
Traumatic mydriasis	2
Tinea tarsi	1
Wound of cornea	1
Burn of cornea	1

Ear (2).

Otorrhœa	1
Cerumen	1

Unclassified (6).

Alcoholism	3
Old age and bedsores	2
Nothing wrong	1

Total Cases, 425.

Estimating the prevalence of any one type of illness in the locality, the following percentage table is of interest, placed in the consecutive order of frequency of the systems affected, thus:—

Per cent.	Systems
22·3	Digestive affections.
14·1	Fevers.
13·8	Respiratory ,,
12·0	Constitutional ,,
10·1	Circulatory ,,
8·2	Surgical ,,
5·6	Nervous ,,
5·1	Reproductive ,,
2·6	Cutaneous ,,
2·6	Eye ,,
1·4	Urinary ,,
1·4	Unclassified ,,
0·4	Ear diseases.

(*To be continued.*)

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—James Little, M.D., F.R.C.P.I.

General Secretary—William Thomson, F.R.C.S.I.

SECTION OF PATHOLOGY.

President—Conolly Norman, F.R.C.P.I.

Sectional Secretary—John B. Story, F.R.C.S.I.

Friday, November 1, 1895.

The President in the Chair.

Two Dental Malformations.

Dr. Fraser said:—I wish to exhibit—1. A wisdom tooth in left lower maxilla. This tooth is turned upside down, its crown below pointing to the interior of the mouth and its single straight fang directed upwards and outwards to the ramus of the jaw. It is a well-formed and developed tooth, perfectly healthy and lodged in a bony cavity, into which it closely fits. The specimen may be as old as the famous Battle of Clontarf, for it was picked up some years since at the old Dublin graveyard of Bully's Acre, adjoining the Royal Hospital, during some excavations made near the pillar stone of Brian Boroihme's son, who is buried there.

It was brought to my recollection by the recent successful removal of an undescended wisdom tooth lodged in the upper jaw, and causing intense pain to a young gentleman, twenty-two years of age, a patient of mine, by Mr. Murray, of Hume-street, who will, I believe, describe the case before the Dental Society. I do not remember any similar displacement, or rather total inversion, of a wisdom tooth yet described, so far as my reading extends.

2. The incisor teeth of a rabbit. In the lower jaw both incisors project symmetrically, each upwards of an inch in length and diverging, instead of being in close apposition; they terminate in small, bony knobs, which is not usual in such malformations. In the upper jaw, one incisor springing from the left upper maxilla is curved in a half-spiral outwards, and is nearly an inch long. The other incisor is very small and weak, and passes underneath its

companion to the left side. The cause of this appears to be a diseased condition of the upper maxillary bone, whence it springs, which is carious. Whether proceeding from injury or disease it is difficult to decide. Such malformations are not by any means uncommon and must, as in this case, entail severe starvation to the sufferer. This rabbit was young, probably about five months old, and was quite emaciated. I am specially indebted to Dr. Brown for the preparation of this pretty specimen.

The PRESIDENT said the malformations resembling these often occurred in rodents. The teeth of rodents grow in a segment of a circle. When one tooth is misplaced or lost, the opposing tooth grows to a great length. In this case the absence of one incisor and the twisting of another in the upper jaw seemed to have produced the prolongation in the lower.

DR. BROWN said that the specimen had been carefully prepared, so that everything was in place. Many malformations were due to fracture; in this case it seemed to be due to disease.

DR. FRASER, replying, said that malformations were not common in all rodents. They were not common in rats.

Rupture of the Heart.

DR. E. H. BENNETT presented an example of rupture of the heart, of which the chief interest was that the subject of the lesion, which was caused by the explosion of a bomb which he had in his hands, lived nearly three hours after the accident. Dr. E. H. Bennett referred to the literature of traumatic rupture of the heart and stated the clinical details of his case.

MR. F. A. NIXON had had a case of wound of the heart resembling Dr. Bennett's in some points. The man stabbed himself over thirty times in the region of the heart, quite a number of the wounds penetrating the heart substance, but only two entering its cavity. He also was difficult to keep in bed. He lived nearly twenty-four hours. The patient used to suffer from pain about the umbilicus. At the *post-mortem* he found the pancreatic duct filled with calculi. He wished to know the cause of the white serous fluid in Dr. Bennett's case.

DR. FRASER thought that the distension of the pericardium brought about the delirious state, just as occurred in cases of rheumatism.

The PRESIDENT said that in any cases of aneurysm rupturing into the pericardium there was no clear fluid. In a case he saw recently the pericardium was full of nearly fluid blood, although the person had died several hours previously.

Dr. Bennett, replying, said that the man was not drunk. There was no penetration of the pericardium from without. He never, before, had seen the pericardium distended with blood which was differentiated into serum and clot, as it was in this case. It was not perfectly transparent serum but rather opalescent. The wound of the coronary vessel communicated with the cavity of the pericardium, but it was very small.

Myoma of Uterus.

Mr. F. A. Nixon exhibited a myoma of uterus which weighed $21\frac{3}{4}$ lbs. after removal.

The Section then adjourned.

BEHAVIOUR OF THE TYPHOID-BACILLUS IN WATER.

E. O. Jordan, Ph.D., reports (*Medical News*, Philadelphia LXVII. 13) a series of experiments, from which he draws the following conclusion:—"1. The age of the typhoid-stock influences greatly the life of the bacilli introduced into water, a freshly isolated stock possessing distinctly greater vitality than one that has been under cultivation for some months. 2. The typhoid-bacillus, when introduced with proper precautions into sterilised Lake Michigan water does not multiply, but may, under certain conditions, maintain its vitality for upward of ninety-three days. 3. The colon-bacillus, on the contrary, under similar conditions undergoes rapid multiplication and may remain alive for upward of two hundred and sixty-two days. 4. In re-distilled water the typhoid-bacillus perishes much more speedily than in the water of the lake. 5. The quantity of organic matter (peptone) in re-distilled water influences fundamentally the life of the typhoid bacillus; so small an increment as 0·0126 organic nitrogen (parts per 100·000) causing a perceptible lengthening of life. 6. In sterilised lake-water the addition of a still smaller quantity of organic nitrogen—0·0012—affects the longevity of the typhoid bacilli introduced."

FORMOL.

Dr. Winkel reports very favourably of a 1 in 1000 solution of formol in cases of leucorrhœa. In myomata, carcinomata, and sarcomata, he found the solution to lessen the amount of the secretion, and sensibly diminish the pain.—*Ther. Mntsh.*

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.;
F.R.C.P.I.; F. R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, January 25, 1896.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Jan. 4.	Jan. 11.	Jan. 18.	Jan. 25.		Jan. 4.	Jan. 11.	Jan. 18.	Jan. 25.
Armagh -	14·0	63·1	14·0	14·0	Limerick -	26·7	23·9	21·1	19·6
Belfast -	24·4	23·7	31·0	25·2	Lisburn -	29·8	21·3	17·0	21·3
Cork -	24·2	17·3	20·1	24·9	Londonderry	37·7	18·8	18·8	25·1
Drogheda -	26·4	8·8	35·1	22·0	Lurgan -	18·2	27·4	36·5	13·7
Dublin -	28·8	27·3	21·9	26·8	Newry -	24·1	16·1	32·2	36·2
Dundalk -	25·1	4·2	20·9	25·1	Sligo -	25·4	30·5	35·5	30·5
Galway -	3·8	26·4	15·1	26·4	Waterford -	37·5	15·0	20·0	27·5
Kilkenny -	14·2	14·2	9·4	9·4	Wexford -	13·5	31·6	31·6	13·5

In the week ending Saturday, January 4, 1896, the mortality in thirty-three large English towns, including London (in which the rate was 20·0), was equal to an average annual death-rate of 20·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·0 per 1,000. In Glasgow the rate was 23·2. In Edinburgh it was 17·3.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 26·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·3 per 1,000, the rates

varying from 0·0 in ten of the districts to 4·7 in Kilkenny—the 3 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 130 deaths from all causes registered in Belfast are 2 from measles, 4 from scarlatina, 2 from whooping-cough, and 2 from diphtheria. The 24 deaths in Londonderry comprise 1 from whooping-cough and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 218—112 boys and 106 girls; and the registered deaths to 193—110 males and 83 females.

The deaths, which are 25 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·8 in every 1,000 of the population, being 3·6 under the mean rate for the first week of the ten years 1886–1895. All of the deaths in public institutions registered were deaths of persons admitted from within the district.

The number of deaths from zymotic diseases registered was 10, being 5 over the very low number for the preceding week, but 12 under the average for the first week of the last ten years. The 10 deaths comprise 2 from scarlet fever (scarlatina), 1 from influenza, 2 from whooping-cough, 3 from enteric fever, and 1 from erysipelas.

One case of small-pox was admitted to hospital: no cases of the disease had been admitted to hospital during the preceding week, but in the week ended December 21, 2 cases were received. Four small-pox patients were discharged, and 8 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

Sixteen cases of enteric fever were admitted to hospital, against 9 admissions in the preceding week, and 13 in the week ended December 21. Nine patients were discharged, 1 died, and 71 remained under treatment on Saturday, being 6 over the number in hospital on the previous Saturday.

The number of cases of scarlatina admitted to hospital was 19, being 9 under the admissions in the preceding week, but 2 over the number admitted in the week ended December 21. Fourteen patients were discharged, 1 died, and 116 remained under treatment on Saturday, being 4 over the number in hospital at the close of the preceding week.

As in each of the two weeks preceding, 40 deaths from diseases of the respiratory system were registered. The average number for the first week of the ten years 1886–1895 was 60. The 40 deaths comprise 23 from bronchitis and 14 from pneumonia or inflammation of the lungs.

In the week ending Saturday, January 11, the mortality in thirty-three large English towns, including London (in which the rate was 18·1), was equal to an average annual death-rate of 18·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·6 per 1,000. In Glasgow the rate was 21·9, and in Edinburgh it was 16·9.

The average annual death-rate in the sixteen principal town districts of Ireland was 24·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in ten of the districts to 5·1 in Sligo—the 6 deaths from all causes registered in that district comprising 1 from typhus. Among the 126 deaths from all causes registered in Belfast are 1 from measles, 4 from scarlatina, 3 from whooping-cough, 1 from diphtheria, and 7 from enteric fever. The 12 deaths in Londonderry comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 201—112 boys and 89 girls; and the registered deaths to 190—101 males and 89 females.

The deaths, which are 58 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·3 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 27·3 per 1,000. During the first two weeks of the current year the death-rate averaged 28·6, and was 6·1 under the mean rate in the corresponding period of the ten years 1886–1895.

The number of deaths from zymotic diseases registered was 16, being 6 over the low number for the preceding week, but 13 under the average for the second week of the last ten years. The 16 deaths comprise 1 from measles, 5 from influenza and its complications, 1 from whooping-cough, 2 from enteric fever, 2 from diarrhœa, 1 from dysentery, and 2 from erysipelas.

Three cases of small-pox were admitted to hospital, against 1 admission in the preceding week. Three small-pox patients were discharged, and 8 remained under treatment on Saturday, being equal to the number in hospital on that day week.

The number of cases of enteric fever admitted to hospital was 10, being 6 under the admissions in the preceding week, but 1 over the number admitted in the week ended December 28. Eleven patients were discharged, 1 died, and 69 remained under treatment on Saturday, being 2 under the number in hospital at the close of the preceding week.

The weekly number of cases of scarlatina admitted to hospital, which had fallen from 28 for the week ended December 28, to 19 for the following week, further declined to 11. Ten patients were discharged, and 117 remained under treatment on Saturday, being 1 over the number in hospital on that day week.

The number of deaths from diseases of the respiratory system registered was 40, being 33 below the average for the corresponding week of the last ten years. The 40 deaths comprise 29 from bronchitis and 10 from pneumonia or inflammation of the lungs.

In the week ending Saturday, January 18, the mortality in thirty-three large English towns, including London (in which the rate was 19·1), was equal to an average annual death-rate of 19·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·5 per 1,000. In Glasgow the rate was 21·0, and in Edinburgh it was 15·2.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 24·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·8 per 1,000, the rates varying from 0·0 in ten of the districts to 5·1 in Sligo—the 7 deaths from all causes registered in that district comprising 1 from whooping-cough. Among the 165 deaths from all causes registered in Belfast are 2 from measles, 3 from scarlatina, 3 from whooping-cough, 1 from diphtheria, 6 from enteric fever, and 3 from diarrhœa. The 29 deaths in Cork comprise 1 from whooping-cough, 2 from enteric fever, and 2 from diarrhœa. The 12 deaths in Londonderry comprise 2 from scarlatina and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 202—97 boys and 105 girls; and the registered deaths to 151—68 males and 83 females.

The deaths, which are 97 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·5 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 21·9 per 1,000. During the first three weeks of the current year the death-rate averaged 26·5, and was 8·9 under the mean rate for the corresponding period of the ten years, 1886–1895.

Only 9 deaths from zymotic diseases were registered, being 20 below the average for the corresponding week of the last ten years,

and 7 under the number for the previous week. They comprise 1 from small-pox—that of a man aged 70 years, no vaccination marks visible—1 from scarlet fever (scarlatina), 4 from influenza and its complications, and 2 from enteric fever.

No cases of small-pox were admitted to hospital. Two small-pox patients were discharged, 1 died, and 5 remained under treatment on Saturday, being 3 under the number in hospital on that day week.

Eleven cases of enteric fever were admitted to hospital, being 1 over the admissions in the preceding week, but 5 under the number for the week ended January 4. Twelve patients were discharged, 1 died, and 67 remained under treatment on Saturday, being 2 under the number in hospital at the close of the preceding week.

The decline in the number of cases of scarlatina admitted to hospital, noted for each of the two weeks preceding did not continue, the admissions amounting to 28, being 17 in excess of the admissions in the previous week, 9 over the number in the week ended January 4, and equal to the number in the week ended December 28. Fifteen patients were discharged, and 130 remained under treatment on Saturday, being 13 over the number in hospital on that day week.

Only 33 deaths from diseases of the respiratory system were registered, being 40 below the average for the corresponding week of the last ten years, and 7 under the number for the previous week. They comprise 19 from bronchitis and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, January 25, the mortality in thirty-three large English towns, including London (in which the rate was 18·6), was equal to an average annual death-rate of 18·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·1 per 1,000. In Glasgow the rate was 20·6, and in Edinburgh it was 15·8.

The average annual death-rate in the sixteen principal town districts of Ireland was 25·2 per 1,000 of the population.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in ten of the districts to 3·5 in Cork—the 36 deaths from all causes registered in that district comprising 2 from typhus and 3 from enteric fever. Among the 134 deaths from all causes registered in Belfast are 2 from measles, 2 from scarlatina, 4 from whooping-cough, and 1 from enteric fever. The 16 deaths in Londonderry comprise 2 from whooping-cough.

In the Dublin Registration District the registered births amounted to 196—92 boys and 104 girls; and the registered deaths to 184—100 males and 84 females.

The deaths, which are 43 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 27·4 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 26·8 per 1,000. During the first four weeks of the current year the death-rate averaged 26·8, and was 8·2 under the mean rate for the corresponding period of the ten years, 1886–1895.

The number of deaths from zymotic diseases registered was 18, being 9 over the low number for the preceding week, but 9 under the average for the fourth week of the last ten years. The 18 deaths comprise 1 from scarlet fever (scarlatina), 3 from influenza and its complications, 1 from whooping-cough, 6 from enteric fever, and 3 from diarrhœa.

Two cases of small-pox were admitted to hospital. In the preceding week no cases of the disease had been admitted; but in the week ended January 11, 3 cases were received. Two small-pox patients were discharged and 5 remained under treatment on Saturday, being equal to the number in hospital at the close of the preceding week.

Fourteen cases of enteric fever were admitted to hospital, being 3 over the admissions in the preceding week. Eight patients were discharged, 3 died, and 70 remained under treatment on Saturday, being 3 over the number in hospital on that day week.

The number of cases of scarlatina admitted to hospital was 22, being 6 under the admissions in the preceding week, but 11 over the number admitted in the week ended January 11. Sixteen patients were discharged, 1 died, and 135 remained under treatment on Saturday, being 5 over the number in hospital at the close of the preceding week.

Forty-two deaths from diseases of the respiratory system were registered, being 9 over the number in the preceding week, but 19 under the average for the fourth week of the last ten years. They consist of 28 from bronchitis, 10 from pneumonia, 2 from croup, and 2 from pleurisy.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of January, 1896.

Mean Height of Barometer,	30·308 inches.
Maximal Height of Barometer (on 9th, at 10 a.m.),	31·020 „
Minimal Height of Barometer (on 15th, at 9 a.m.),	29·397 „
Mean Dry-bulb Temperature,	43·4°.
Mean Wet-bulb Temperature,	41·6°.
Mean Dew-point Temperature,	39·5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·246 inch.
Mean Humidity,	86·8 per cent.
Highest Temperature in Shade (on 2nd),	56·8°.
Lowest Temperature in Shade (on 21st),	27·9°.
Lowest Temperature on Grass (Radiation) (on 21st),	23·1°.
Mean Amount of Cloud,	67·0 per cent.
Rainfall (on 14 days),	·720 inch.
Greatest Daily Rainfall (on 13th),	·212 inch.
General Directions of Wind,	W., S.W.

Remarks.

January, 1896, proved very mild, often dull and damp, with frequent but scanty rainfall, snow on only one day, and no hail. It afforded a complete contrast in every particular to the severe January of 1895, and will be especially memorable for the record-breaking readings of the barometer on the 9th. On that day pressure exceeded 31 inches over Scotland, the North of England and the North of Ireland, and reached 31·09 inches at Ardrossan, in Ayrshire. On the 29th, another area of high pressure caused the barometer to rise above 30·9 inches over the southern half of the British Isles—the extreme reading of 30·96 inches being recorded at Roche's Point, Cork.

In Dublin the arithmetical mean temperature (44·3°) was much above the average (41·4°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 43·4°. In the thirty-one years ending with 1895, January was coldest in 1881 (M. T. = 33·2°), and warmest in 1875 (M. T. = 46·6°). In 1888 the M. T. was 42·1°; in 1889, 42·4°; in 1890, 44·5°; in 1891, 40·1°; in 1892, 38·8°; in 1893, 40·8°; in 1894, 41·0°; and in 1895, 35·4°. As a general rule, January in Dublin is not colder, but a shade warmer, than

December. This is owing to the full development in January of a winter area of low pressure over the Atlantic, to the northwestward of the British Isles, and to a resulting prevalence of S.W. winds in their vicinity. January, 1896, proved no exception to this rule, the M. T. being 2·7° above that of December, 1895 (41·6°).

The mean height of the barometer was 30·308 inches, or 0·434 inch above the corrected average value for January—namely, 29·874 inches. The mercury rose to 31·020 inches at 10 a.m. of the 9th, and fell to 29·397 inches at 9 a.m. of the 15th. The observed range of atmospheric pressure was, therefore, 1·623 inches—that is, a little more than one inch and six-tenths.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 43·4°, or 2·4° above the value for December, 1895. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*min.* × ·52), the M. T. becomes 44·4°, compared with a twenty-five years' average of 41·5°. The arithmetical mean of the maximal and minimal readings was 44·3°, compared with a twenty-five years' average of 41·4°. On the 2nd the thermometer in the screen rose to 56·8°—wind, S.S.W.; on the 21st the temperature fell to 27·9°—wind, W.S.W. The minimum on the grass was 23·1°, also on the 21st.

The rainfall was only ·720 inch, distributed, however, over 14 days. The average rainfall for January in the twenty-five years, 1865–89, inclusive, was 2·200 inches, and the average number of rainy days was 17·3. The rainfall, therefore, and the rainy days were both much below the average. In 1877 the rainfall in January was very large—4·322 inches on 25 days; in 1869, also, 4·258 inches fell—on, however, only 18 days. But the record rainfall for January was in 1895, namely, 5·711 inches on 24 days, or nearly eight times as much as the rainfall for January of the present year. On the other hand, in 1876, only ·406 inch was measured on but 9 days; and in 1880 the rainfall was only ·563 inch on but 8 days.

Lunar haloes were seen on the 19th and 24th. The atmosphere was foggy on the 2nd, 3rd, 4th, 5th, 7th, 10th, 20th, 21st, 22nd, and 26th. High winds were noted on 9 days, reaching the force of a gale on 2 days—the 15th and 16th. Snow and sleet fell on the 10th. Temperature exceeded 50° in the screen on 12 days; while it fell to or below 32° in the screen on only 3 nights, compared with 18 nights in 1895, 7 nights in 1894, 4 nights in 1893, 15 nights in 1892, 7 nights in 1891, 1 night in 1890, and 3 nights in 1889. The minima on the grass were 32° or less on 8 nights, compared with 29 nights in 1895, 17 nights in 1894, 16 nights

in 1893, 25 nights in 1892, 21 nights in 1891, 15 nights in 1890, and 16 nights in 1889.

Although still changeable, damp, and showery, the weather of the opening period of the month (1st–4th) showed a marked improvement when compared with that of Christmas week. It was very unusually mild, or indeed warm, for the time of year; and the rains were not heavy. The dampness of the atmosphere was attended by the formation of more or less fog. On the 1st an area of low atmospheric pressure existed off the north of Ireland and the west of Scotland. This system threw a warm but moist south-westerly air current upon the French and British coasts. Rain fell generally and the thermometer rose to 55°, 56°, and even 57° at both English and Irish stations. In contrast to this mild weather, severe cold was felt in Russia, Austria, and Germany. At Berlin the 8 a.m. temperatures were 26°, 13°, 35°, and 35°. When the thaw set in at Berlin on Friday, the 3rd, temperature was already giving way decidedly in the British Isles, where the distribution of pressure had become anticyclonic on Thursday. Saturday was at times fair and bright, but a great deal of fog drifted in from the Irish Sea and St. George's Channel along the east coast of Ireland. In Dublin the barometer ranged from 29·907 inches at 9 p.m. of Wednesday (wind, S.S.W.) to 30·293 inches at 9 p.m. of Saturday (wind, S.E.). On Thursday the shade thermometers rose to 56·8°; on Saturday they fell to 43·0°. Rain was measured on two days, the total amount being ·068 inch, of which ·048 inch was recorded on Thursday. The prevailing winds were S.S.W. and S.E. The mean temperature was some 10° above the average.

The most striking features in the weather of the week ended Saturday, the 11th, were the intensity developed by an anticyclone over the British Isles on Wednesday and Thursday, and the occurrence of a bitterly cold "polar" gale in Italy and the S.E. of France about the same time. On Sunday morning an area of high atmospheric pressure, bounded by the isobar of 30·50 inches, lay over the southern half of the North Sea, Holland, Belgium, and the greater part of England. By Monday morning this system had spread both westward and eastward, and the barometer had risen above 30·60 inches. On Tuesday, at 8 a.m., the isobar of 30·70 inches embraced nearly the whole of Ireland and the central counties of England. Early on Wednesday the isobar of 30·90 inches swept in a curve south-westwards from the Hebrides to Mayo. At 8 a.m. on Thursday the isobar of 31 inches included the whole of Scotland, the Hebrides, Northumberland, Durham,

Westmoreland, Cumberland, and the northern half of Ireland—the highest pressure of all being 31·09 inches at Ardrossan. In Dublin the maximum was reached at 10 a.m. and was 31·02 inches—probably the highest reading of the barometer ever recorded in the Irish capital. From this time to the close of the week pressure gave way gradually. Except on Friday morning, leaden skies accompanied the anticyclone, so that no severe frost occurred. At Parsonstown, however, the thermometer read only 25° at 8 a.m. on Friday. Intense cold set in at this time over Germany, the east and south-east of France, and Italy, accompanied by strong north-easterly winds and in places gales. In Dublin the mean height of the barometer was 30·783 inches, pressure ranging from 30·453 inches at 9 a.m. of Sunday (wind, S.) to 31·020 inches at 10 a.m. of Thursday (wind, E.N.E.). The corrected mean temperature was 41·8°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 40·8°. On Wednesday the screened thermometers rose to 48·1°, on Friday they fell to 31·8°. Variable, light winds prevailed. Snow and sleet fell on Friday afternoon to the amount of ·020 inch; an additional ·002 inch of rain was measured on Saturday.

Weather of the westerly type—changeable, mild, squally and showery—prevailed throughout the week ended Saturday, the 18th. At the beginning traces of the remarkable anticyclone, which had hung over the British Islands during the previous week, were still found over the South of Ireland—the barometer at 8 a.m. of Sunday reading 30·55 inches at Valentia Island and 30·54 inches at Roche's Point, Co. Cork. The barometer at this time was falling throughout Western Europe, and depressions were advancing to the North British and Norwegian coasts from the Atlantic. On Sunday the cold was intense in the South of Germany and East of France; the weather was moderately cold in England and Ireland, mild in Scotland. At 8 a.m. of Monday the barometer ranged from 28·70 inches at Bodö, in Norway, to 30·25 inches at Lyons—consequently strong westerly (S.W. to N.W.) winds swept over Western Europe, and the weather was generally unsettled, with rain in many places; especially when a secondary depression crossed England on Monday night. Temperature now became high in the south, but fell in the north, of the United Kingdom—only, however, to rise again quickly in the latter region on Wednesday morning, when the barometer was once more down to 28·63 inches at Wick. As this deep depression passed away to the eastward, the thermometer fell fast in the north. But it rose rapidly again on Friday, when a warm W. wind was blowing on the Atlantic coasts of both France and

the British Isles. Saturday was springlike in its mildness, and the air was dry as well as genial. In Dublin the mean height of the barometer was 29·912 inches, pressure ranging from 30·440 inches at 9 a.m. of Sunday (wind, W.) to 29·397 inches at 9 a.m. of Wednesday (wind also W.). The corrected mean temperature was 46·3°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 45·8°. The screened thermometers fell to 36·7° on Sunday and rose to 53·7° on Saturday. The rainfall was ·363 inch on five days, ·212 inch being registered on Monday. The prevailing wind was westerly.

The changeable, uncertain weather, so characteristic of the present winter, continued during the week ended Saturday, the 25th. Conditions were at first anticyclonic, and the weather was fine but cold and often foggy. A dense fog on Wednesday evening was followed by cyclonic conditions, and dull, damp, and mild or even warm weather. On Sunday a broad band of high atmospheric pressure (30·30 inches) stretched across Ireland, England, France, and Germany, whereas an area of low pressure (29·70 inches) lay off the North of Scotland. In Dublin the weather was at this time fine, bright, and bracing. The anticyclone steadily held its ground and developed intensity, until on Tuesday morning the barometer read 30·61 inches at Berlin. Hoar frost and fog, with fine, bright intervals during the daytime, prevailed in Dublin—a "silver thaw" following on Tuesday evening. On Wednesday a large depression passed eastwards across Scandinavia, and this caused a rise of temperature in England and Ireland, but falls of sleet and snow in Scotland, where strong N.W. winds blew on the morning of the day named. At sunset the sky cleared in Dublin, and, as the air was calm, temperature fell fast, the result being the development of an exceedingly dense fog at night. Thursday was fine and mild, with a southerly wind. In the morning very sharp frost was felt in Great Britain, the shade thermometer falling to 20° at Cambridge, 21° at Loughborough, and 23° at Leith and Nairn. In a few hours a rapid rise of temperature took place, amounting to 25° at Leith, 19° at Nairn, 18° at Cambridge, and 16° at Loughborough. The week closed dull, damp, and mild. In Dublin the mean height of the barometer was 30·176 inches, pressure ranging from 30·464 inches at 9 a.m. of Monday (wind, calm) to 29·787 inches at 9 a.m. of Saturday (wind, W.). The corrected mean temperature was 42·1°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 40·7°. On Tuesday the screened thermometers fell to 27·9°; on Friday they rose to 53·8°. The prevailing winds were S.W. and W. Rain fell on

four days to the amount of ·134 inch, ·082 inch being registered on Friday.

At first cyclonic in type, changeable and at times rainy, the weather of the closing period, 26th–31st, inclusive, became on Tuesday, the 28th, anticyclonic, quiet and fine, and so continued to the close of the month. For the third time in January, 1896, an anticyclone spread over the British Isles, and for the second time the barometric pressures recorded were of very abnormal and unusual intensity. At 11 p.m. of Wednesday the barometer rose to 30·96 inches at Roche's Point, Cork Harbour; and on the evening of that day as well as on Thursday morning the isobar of 30·90 inches embraced the southern half of Ireland, Wales, and a great portion of the South of England. It will be remembered that the highest readings in the remarkable anticyclone of January 9th were reported from Scotland and the northern parts of England and Ireland. After Thursday, the barometer fell generally though gradually. During the anticyclonic period quiet, cool but not cold, often dull weather prevailed. The atmospheric humidity also varied very much—the mornings being damp, the evenings very dry. While the anticyclone hung over England and Ireland, large and deep depressions swept eastwards across Scandinavia, causing westerly gales and rainy, open weather even in the extreme North of Europe. In Dublin the barometer ranged between 29·992 inches at 9 a.m. of Monday (wind S.W.) and 30·922 inches at 4 30 p.m. of Wednesday (wind, W.N.W.). On Monday the screened thermometers rose to 55·8°; on Sunday, they fell to 36·8°. The prevailing wind was westerly. Rain fell on two days to the amount of ·133 inch, ·089 inch being registered on Monday.

In Dublin the rainfall up to January 31st, 1896, amounted to only ·720 inch on 14 days, compared with 5·711 inches on 24 days in 1895, and with a twenty-five years' average (1865–1889) of 2·200 inches on 17·3 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was only ·485 inch on 7 days, compared with 6·190 inches of rain on 19 days in 1895. The heaviest falls in 24 hours were ·130 inch on the 24th, and ·100 inch on the 13th.

At Cloneevin, Killiney, Co. Dublin, the rainfall was ·700 inch on 9 days, ·31 inch being measured on the 24th. The average fall for the 10 years, 1885–1894, was 2·019 inches on 16·6 days. No snow fell. In 1894, the rainfall was 3·260 inches on 23 days, in 1895 it was 5·930 inches on 24 days. In 1891, only ·47 inch fell on, however, 11 days.

PERISCOPE.

ARMY MEDICAL DEPARTMENT.

THE Director-General has forwarded, for publication, the following list of successful candidates for commissions in the Medical Staff of Her Majesty's Army at the examination held in London in February, 1896 :—

Order of Merit	Names	Marks	Order of Merit	Names	Marks
1.	Birrell, E. T. F.	2,740	6.	MacDougall, A. J.	2,207
2.	Morris, A. H.	2,308	7.	Riddick, G. B.	2,135
3.	Archer, S. A.	2,297	8.	Hewetson, H.	2,107
4.	Cochrane, E. W. W.	2,223	9.	Clements, R. W.	2,000
5.	Swably, M.	2,210			

ARMY MEDICAL SCHOOL, NETLEY.

BRITISH MEDICAL SERVICE.—The following is the official list of surgeons on probation of the Medical Staff of the British Army who were successful at both the London and Netley examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley, and the combined numbers are accordingly shown in the list which follows :—

January 31st, 1896.

		Combined Marks			Combined Marks
[a] 1	Brereton, F. S.	5,311	6	Waring, A. H.	4,192
2	Statham, J. C. B.	4,438	7	Hooper, A. W.	4,120
3	Cooper, R. M. C. H.	4,398	8	Ward, W. A.	4,094
4	Hayes, E. C.	4,322	9	Forrest, E. G.	3,876
5	Probyn, P. J.	4,274			

INDIAN MEDICAL SERVICE.—The following is the official list of surgeons on probation of the Indian Medical Service who were successful at both the London and Netley examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those

[a] Gained the Herbert Prize of £20, the 1st Montefiore Prize of 20 guineas, the Prize in Pathology presented by Surgeon Major-General Hooper, T.M.S., and the de Chaumont Prize in Hygiene.

gained at Netley, and the combined numbers are accordingly shown in the list which follows:—

January 31st, 1896.

		Combined Marks			Combined Marks
[a] 1	Cochrane, A. W. R.	5,139	10	Dawes, C. D.	4,219
2	Clemesha, W. W.	5,039	11	Perry, E. L.	4,193
[b] 3	Bakhla, C. R.	4,994	12	Pinchard, M. B.	4,189
4	Black, J. A.	4,913	13	Niblock, W. J.	4,175
5	Wilson, R. P.	4,703	14	Harrison, C. B.	4,173
[c] 6	Lindesay, V. E. H.	4,670	15	Payne, E. L. F.	4,093
7	Robertson, J. C.	4,459	16	Lalor, N. P. O'G.	4,040
8	Rainier, N. R. J.	4,430	17	Symons, T. H.	4,025
9	Kukday, K. V.	4,427	18	Rost, E. R.	3,813

The prizes were presented by General the Right Honourable Sir Redvers H. Buller, V.C., G.C.B., K.C.M.G., Adjutant-General to the Forces.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

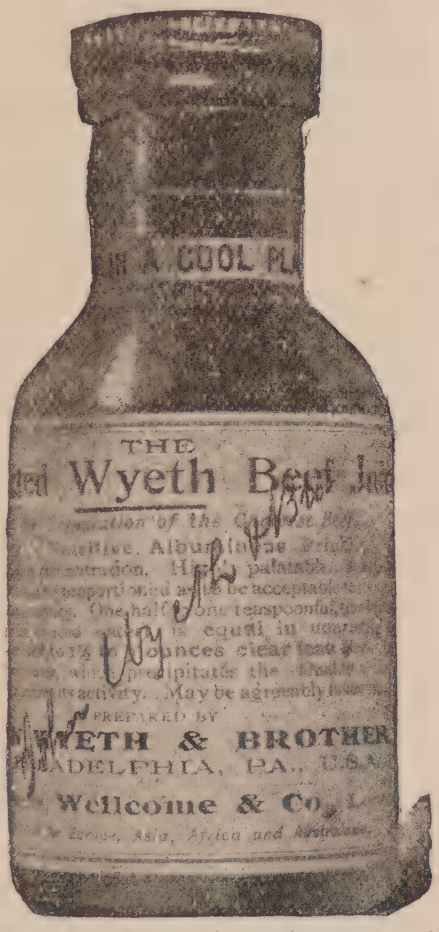
Terrōl.

Under this name a pure and semi-liquid petroleum has been placed in the market as a substitute for cod-liver oil. It is odourless and almost tasteless, so that it is easily taken by those to whom the smell and taste of cod-liver oil are so repugnant. Terrōl is very assimilable and does not sicken. It may be taken by itself in teaspoonful doses three or four times a day. Children under twelve years old should be ordered half this quantity. It may also be given with a little water, or milk, or sherry. With water it does not mix, but it floats and is quickly swallowed. In cold weather terrōl thickens or congeals. If this happens, the bottle should be gently warmed, when its contents at once liquefy and can be poured out with ease. Terrōl is a cheap remedy, for a five-ounce bottle, containing 40 doses, may be bought for one shilling and sixpence. Each dose, therefore, costs the patients a little less than one halfpenny. The address of the Terrōl Company is 30, 32, and 34 Devonshire-road, Forest Hill, London, S.E.

[a] Gained the 2nd Montefiore Prize.
[b] Gained the Maclean Prize for Clinical and Ward work.
[c] Gained the Martin Memorial Medal and the Parke's Memorial Medal.

The Perfected Wyeth Beef Juice.

The successful result of a series of experiments has placed it in the power of Messrs. Burroughs, Wellcome & Co., of London, to largely increase the albuminoid strength of the beef-juice which bears the name of the celebrated firm of Wyeth & Brother, Philadelphia.



An analysis made in the laboratory of the *Lancet* goes to show that the two albuminous constituents of beef-juice, expressed in the cold, and which solidify on heating the juice, are increased 30 per cent., amounting in the new preparation to at least 4·24 per cent., or 18 grains of dry beef albumin in a fluid ounce. This change has been effected without decreasing the proportion of any of the palatable principles which have done so much to make the Perfected Wyeth Beef Juice so popular with, and so readily taken by, the sick and weak. The improved mode of preparation has also increased the amount of the non-albuminous extractives of beef. The *Lancet* finds that the total organic matter of the old preparation was 38·01 per cent., whereas in the new it is 47·30 per cent. The mineral matter in the old was 17·12 per cent., in the new it is 18·16 per cent. In a case of marasmus recently under our care, this valuable food was taken and enjoyed when scarcely anything would remain on the patient's stomach.

Australian Wines.

Messrs. Burgoyne & Co., of Dowgate Hill, Cannon-street, London, E.C., have submitted samples of four of the Australian wines imported by them. The first is now a well-known wine, by name *Tintara*. It is the produce of the Tintara Vineyard, planted in 1863, by a member of the medical profession, Dr. A. C. Kelly, then of Maclaren Vale, Adelaide. This vineyard stands on a gravelly and ferruginous soil, on hill-slopes 600 feet above the sea. It is in character full-bodied and nutritious, something between a port and a burgundy. It was introduced into the United Kingdom more than a quarter of a century ago, when samples of the *primitiæ*

or first-fruits (wine of 1867) were favourably reported on in the *Lancet* and *Medical Times and Gazette* (the latter notice being from the able pen of Dr. Robert Druitt). *Tintara* has fully sustained its reputation, and will be found a useful tonic wine in many cases of debility. It is very inexpensive—costing in imperial pint flagons only 18 shillings a dozen, in imperial quart flagons 36 shillings a dozen, and in bottles 26 shillings a dozen.

The Mount Ophir vineyards, in Victoria, yield an exceptionally fine ferruginous wine, which is the same price as *Tintara*. It bears the name of *Ophir*. A less soft and delicate wine is the *Kangaroo* burgundy. It is also cheaper, costing 23 shillings per dozen bottles, or 15 shillings per dozen imperial pint flagons and 30 shillings per dozen imperial quart flagons.

Burgoyne's *Highercombe Amber* is a really delicious white wine, reminding one of the Italian *Chienti*. It is somewhat dearer than *Tintara* and *Ophir*, being 30 shillings a dozen, or in flagons one guinea and two guineas per dozen, respectively.

THE LATE DR. GEORGE H. KIDD.

In our last number we briefly alluded to the lamented death of our friend and whilom colleague, Dr. George H. Kidd. He was Editor of this Journal from 1863, when he succeeded Dr. John Moore Neligan, until 1869, when Dr. James Little in turn succeeded him. Dr. Kidd enriched the pages of the Dublin Journal of Medical Science with many contributions of sterling merit. The following list of these will prove of interest to many:—

1850. "Observations on 'Imputed Poisoning.'" Vol. X. Page 73.
1856. "On Inflammation and Obstruction of the Branches of the Pulmonary Artery." Vol. XXII. Page 376.
1859. "On Distortion of the Features in Newly-born Infants." Vol. XXVII. Page 155.
1861. "On the Pathology of Asthma." Vol. XXXI. Page 292.
1862. "On Epistaxis from Renal Disease." Vol. XXXIII. Page 36.
"On a Congenital Tumour of the Head." Vol. XXXIII. Page 464.
1863. "Case of Retention of a Pessary for 13 Years." Vol. XXXV. Page 471.

"Mechanism of Expulsion of the Head in Face to Pubes Presentations." Vol. XXXVI. Page 460.

1864. "On the Use of the Drainage Tube, for removal of Fluids effused into the Cavity of the Pleura." Vol. XXXVII. Page 365.

"Case of Excessive Vomiting in the Eighth Month of Pregnancy." Vol. XXXVIII. Page 253.

1865. "A Case in which Premature Labour was induced by the use of Fluid Dilators." Vol. XXXIX. Page 235.

"Vesico-vaginal Fistula." Vol. XL. Page 426.

"On Dysmenorrhœa." Vol. XL. Page 470.

1866. "On the Use of Galvanic Pessaries." Vol. XLI. Page 222.

"Medicated Pessaries." Vol. XLI. Page 226. Vol. XLII. Page 537.

1867. "Fibrinous Tumours." Vol. XLIII. Page 187.

"On Cephalotripsy." Vol. XLIII. Pages 224 and 333.

"Modified Cephalotribe." Vol. XLIII. Pages 230 and 338.

1867. "A Case of Coccyodynia cured by Operation." Vol. XLIV. Page 477.

1868. "On the Postural Treatment of Prolapse of the Funis." Vol. XLVI. Page 89.

"Intra-uterine Fibrous Polypi." Vol. XLVI. Page 230.

"Intra-uterine Fractures. Vol. XLVI. Page 462.

1869. "On the Diagnosis and Treatment of Uterine Polypi." Vol. XLVII. Page 10.

"Reports on Obstetric Medicine and Surgery." Vol. XLVII. Page 452. Vol. XLVIII. Page 595.

"Puerperal Fever." Vol. XLVIII. Page 238.

1870. "Ovarian Tumour, complicating Labour." Vol. XLIX. Page 467.

"Ovarian Tumour." Vol. L. Page 198.

"Reports on Obstetric Medicine and Surgery." Vol. XLIX. Page 396. Vol. L. Page 406.

"Multiple Ovarian Tumour." Vol. L. Page 199.

1871. "On Decapitation as a mode of Delivery in cases of Shoulder Presentation, in which Version cannot be safely effected." Vol. LI. Page 383.

"Report on Obstetric Medicine and Surgery." Vol. LI. Page 451.

1872. "Report on Obstetric Medicine and Surgery." Vol. LIII. Page 37.

"Presidential Address to the Dublin Obstetrical Society." Vol. LIII. Page 64.

"Revaccination." Vol. LIII. Pages 228, 238, 239.
"Decapitation by the Hempsaw." Vol. LIII. Page 273.
"On Fibrous Tumours of the Uterus." Vol. LIV. Page 132.
"Epitheliomatous Tumour of the Vagina." Vol. LIV. Page 148.

1873. "Presidential Address to the Dublin Obstetrical Society." Vol. LV. Page 65.
"Intra-uterine Fibroid." Vol. LV. Page 273.
"Epithelioma of the Uterus." Vol. LV. Page 602.
"Ovarian Tumour." Vol. LV. Page 603.
"A Case of Chronic Inversion of the Uterus in which Reduction was effected by Manipulation." Vol. LVI. Page 55.

1874. "Fibrous Tumour of the Uterus." Vol. LVII. Page 281.
"Colloid Carcinoma of the Ovary." Vol. LVII. Page 370.
"Report on Midwifery." Vol. LVII. Page 515.

1875. "Further Observations on Fibrous Tumours of the Uterus." Vol. LX. Page 456.

1876. "Specimen of a Placenta." Vol. LXI. Page 255.
"On a Case of Multilocular Ovarian Tumour, complicated with Pregnancy, Rupture of a Cyst, and Peritonitis." Vol. LXII. Page 499.

1877. "Vesical Calculus in the Female." Vol. LXIII. Page 576.

1878. "Diagnosis of Dropsy of the Amnion." Vol. LXVI. Page 50.
"New Midwifery Forceps." Vol. LXVI. Page. 227.
"Uterine Tumour." Vol. LXVI. Page 227.

1879. "Ovarian Tumour." Vol. LXVII. Page 236.
"Brow Presentation." Vol. LXVII. Page 339.
"A Case of Transfusion." Vol. LXVII. Page 532.
"Intra-uterine Tumours." Vol. LXVIII. Page 252.

1880. "Erythema uterinum, or Roseola uterina." Vol. LXIX. Page 331.

1884. "On Puerperal Fever." Vol. LXXVIII. Page 97.
"Stone in the Female Bladder." Vol. LXXVIII. Page 197.

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

APRIL 1, 1896.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XVII.—*A Case of Sudden Death due to Thrombosis and Advanced Endarteritis of the Coronary Arteries.*[a] By J. MAGEE FINNY, M.D. Dub.; Ex-Pres. R.C.P.I.; King's Professor of Practice of Medicine in the School of Physic in Ireland; Clinical Physician to Sir Patrick Dun's Hospital.

THE following are the clinical notes, for which, and for the record of the *post-mortem* examination, I am indebted to Mr. Moorhead, Medical Resident Pupil :—

CASE.—H. M., aged fifty-eight, was admitted to Sir Patrick Dun's Hospital on November 5th, 1895, complaining of pains in the front of the chest, and in the back between the shoulders; also of severe attacks of breathlessness on the least exertion, and of palpitations which were extremely distressing, and generally came on at night. She has had a cough and muco-purulent expectoration for some months, and feels extremely weak.

Previous Clinical History.—Patient had an attack of scarlet fever when a child. She also had two attacks of what she terms "fever," accompanied by rheumatic pains; neither attack lasted more than three weeks. The first attack occurred in 1882, and the second about 1889. She has borne several children, and led a hard life. Of late her strength has been failing. The pains in the chest of

[a] Read before the Pathological Section of the Royal Academy of Medicine in Ireland, on Friday, March 13, 1896.

which she at present complains began about three weeks previous to admission.

Present Condition.—A pale, wasted, worn-looking woman, with flabby muscles and sallow skin. The feet and legs are swollen and œdematous, and are covered with small purpuric spots, which are also scattered irregularly over the trunk and upper limbs.

Temperature on admission, 99·5° F.; respirations, 34; pulse, 90, extremely irregular, and at times intermittent; arteries tortuous and atheromatous; urine acid, sp. gr. 1015, contains a trace of albumen; no blood. There is evident dyspnœa, amounting at times to orthopnœa. The chest is resonant on percussion; râles and rhonchi are audible all over the chest, in front and behind. The apex beat of the heart is displaced downwards and to the left, the maximum impulse being in the 6th interspace; the impulse is diffused; area of cardiac dulness increased downwards and slightly outwards.

On auscultation a somewhat harsh, loud, and prolonged blowing murmur is heard, with and partially replacing the first sound in the initial area. The murmur is audible in the axilla and behind, just internal to the angle of the scapula. The pulmonary second sound is accentuated. The area of liver dulness is increased downwards between two and three fingers' breadth below the ribs.

Nov. 10th.—Patient gets sudden attacks of great dyspnœa and orthopnœa which occur chiefly at night. The urine contains more albumen, sp. gr. 1020, colour normal. The œdema of legs is greatly diminished, and the purpura is less marked.

Nov. 13th.—Urine sp. gr. 1020; contains blood. Microscopically it contains granular and blood casts, epithelial and blood cells, and granular *débris*. Dyspnœa worse to-night; pulse, 112; irregular respirations, 36; temperature, 98°; slight dulness on percussion at both bases behind; rest of chest resonant; breath sounds normal, but somewhat weak; there is no bronchial breathing or bronchophony; râles and rhonchi diminished; expectoration not abundant, somewhat viscid, muco-purulent, of a greenish yellow colour, not rusty.

Nov. 17th.—On the evening of the 17th the dulness over both bases behind has increased. Breath extremely weak over both bases, and almost inaudible over right base from the level of a horizontal line three fingers' breadth below angle of scapula downwards. The pulse is weak and very irregular. Patient can breathe only in the upright position; respirations, 40. Patient complains of great pain in the cardiac region, radiating to the left and backwards, and looks extremely weak still.

Nov. 18th.—8 30 a.m.—The condition of patient remains unchanged for the better. She has had a bad and restless night, with much orthopnœa. Pulse, 108, weak and irregular; temperature, 96° F.; respirations, 40.

10 30 a.m.—Patient died suddenly. The nurse had been speaking to the patient, and turning away crossed to the opposite end of the ward. Hearing a sound in the bed she looked back. The patient's eyes were fixed and staring; the shadow of death crossed the face, and the jaw had dropped. Dr. Finny was summoned from the next ward, and saw her immediately, but the heart sounds could not be heard on auscultation, and there was no pulse at the wrist. Strong ammonia to the nostrils and the hypodermic injection of ether produced no response.

The *post-mortem* examination was made on November 19th. On opening the chest a considerable quantity of clear fluid escaped from each pleural cavity. The lungs were small, normal in colour; consistence normal everywhere, except at both bases, which were slightly firmer. On section, bases of lungs somewhat engorged with blood, a good deal being squeezed out by pressure; no pneumonia; pieces of lung float in water; no pleurisy. A few drachms of fluid in pericardium; heart hypertropied on left side. On section, fat lay in the sulci, and the ventricles were infiltrated with fat, and there seems to be, from the pale colour, a good deal of fatty degeneration, most marked in right ventricles. Mitral valves somewhat calcareous and covered with vegetations, which have also become hard and calcareous. The aortic valves are thick and covered with rough granulations on the ventricular aspect, but seem to close the orifice. Aorta and coronary arteries show atheromatous patches, and the coronary arteries, especially the left, are brittle and calcareous. The left sinus of Valsalva and the beginning of the left coronary artery are occupied by a blood clot which was traced down for 1–2 inches. There was no clot in the aorta or ventricle, or right coronary. The right side of the heart was not distended with blood. Liver enlarged, heavy and engorged with blood. On section, presents appearance of nutmeg liver. Spleen normal. Kidneys small and firm; capsule adherent. On section, intensely engorged with blood.

The microscopic examination and sections were made by Dr. Charles Maunsell (our House Surgeon):—

Liver.—Well-marked cyanotic atrophy.

Kidneys.—Engorgement of chronically diseased organs—(1) some thickening of capsule; (2) irregularity of epithelium lining

tubes; (3) thickening of arteries in places; (4) atrophy of many of the glomeruli, which are replaced by nodules of fibrous tissue; (5), small-celled infiltration in many parts.

Heart.—(1) Some indistinctness of striation; (2) in the vicinity of many branches of the coronary arteries the fibres are broken down, and there is much fibrous tissue and irregular detritus; (3) groups of refractive globules are to be seen in the body of muscle fibres; (4) on treating fresh section with osmic acid these globules stain black.

Remarks.—The *rationale* of the case and the course of the morbid changes, seem to me to be as follows:—First of all, chronic arterial and valvular disease, owing to end-arteritis and valvulitis, existed. These were, in all probability, produced by the attacks of fever and "rheumatic pains" in 1882 and 1889, and by the hard life the patient lived, and by the number of pregnancies she had gone through.

The intra-thoracic pains, of which she complained for three weeks before admission to hospital on Nov. 5, 1895, and which were accentuated the day before her death, were due to the impaired circulation in the aorta and in the coronary vessels, which were undergoing atheromatous and calcareous changes with diminution of their calibre; and as the result of impaired nutrition through these vessels, the muscle of the heart was becoming fibrous, and fattily degenerated. The nocturnal dyspnœa and the palpitations were attributable to these changes being chiefly in the muscles of the right ventricular wall, and thereby failing compensation of the mitral regurgitant disease was induced.

The enlarged nutmeg liver, the pulmonary venous stasis, and the passive double hydrothorax were, in like manner, due to compensatory failure.

The renal hæmorrhages—very unusual in cardiac disease, and then due in the vast majority to embolism—were, in this case, due to the atheroma of the minute branches of the arteries and to their rupture, of which a good specimen is to be seen under the microscope. In all probability the purpura of the upper and lower limbs—the pathology of which condition is still shrouded in mystery—had its

factor in the same arterial changes in the cutaneous capillaries, being accentuated by the altered blood crasis.

The chief interest of the case is, however, centred in the production of the sudden death of the patient. For, ill as she was for a day or two before the morning on which it occurred, there were no special warnings of its approach. I do not think the fatty degeneration of the heart of itself to be a sufficient cause in this case, as one meets with many cases in which there was far more extensive muscular degeneration and infiltration than in this, and yet death may not be due to it, and is not sudden except rupture occur. I attribute it rather to a paralysis of the heart, due to an acute thrombosis of the left and anterior coronary artery, which produced sudden and permanent anæmia in an organ already heavily handicapped, and an inhibitory action through its nerves.

Sudden death is not a very unusual termination of disease of the aortic valves producing great regurgitation. It is also found in cases of aortic aneurism, even although the sac may not have given way, and in cases of advanced fatty disease of the heart. Moreover, where that organ is widely dilated and much weakened in long-standing mitral disease or renal cirrhosis, sudden death may close the scene.

One must never forget the important part the coronary vessels play in two at least of the above cases, and the subject of my communication illustrates how disease of these vessels alone may prove another cause of sudden death. The anatomical characteristics of the coronary arteries help to explain the occurrence of sudden death in case of their occlusion. Their terminal branches are end arteries, and they arise in the sinus of Valsalva. Thus their origin forms a part of the aorta, where atheromatous disease is a very common condition, and which is so often associated with aortic regurgitant disease in elderly people, and it is in such cases that death may occur, as anæmia of the ventricles is probably the cause of their sudden failure to carry on the circulation.

According to Osler,[a] embolism or thrombosis of one of

[a] Principles and Practice of Medicine, p. 675. Osler. Second Edition.

the coronary vessels will lead to a condition which is known as *anæmic necrosis*, or white infarct—which is most commonly seen in the left ventricle and in the septum—in the territory of the distribution of the anterior coronary artery. The affected area has a yellowish-white colour, sometimes a turbid, parboiled aspect, at others a grayish-red tint. Microscopically the changes are characteristic. The nuclei disappear from the muscle-fibres, a condition of fragmentation is present, and the fibres present a homogeneous, hyaline appearance.

Sudden death, Osler states, not infrequently follows the blocking of one of the coronary arteries and the production of this anæmic necrosis, and he calls attention to the importance of such an occurrence in a medico-legal point of view, as it may be the sole lesion in some such cases of sudden death.

My case illustrates the paralysing effect of sudden thrombosis of a large vessel, where the ventricles were already in the pathological condition of fibroid and fatty degeneration and the arteries were the seat of extreme endarteritis and sclerosis.

Since writing this paper my attention was called to a valuable article on the intimate relation between Fibroid Degeneration of the Heart and Coronary Disease, by John Lindsay Steven, M.D., in the *Journal of Pathology and Bacteriology*, November, 1893.

ART. XVIII.—*Two Cases of Paraplegia.*[a] By HENRY T. BEWLEY, M.D., Assistant Physician to the Adelaide Hospital, Dublin.

DURING last summer I had under my care in the Adelaide Hospital two cases of paraplegia, of which, at the request of our Secretary, I am about to give an account. I regret the notes I have of them are not more complete. I was away for my holiday during the time they were in hospital, and I trust the Section will excuse the deficiencies in my accounts:—

[a] A Paper read before the Medical Section of the Academy of Medicine, Ireland, on Friday, February 28th, 1896.

Case I.—Mrs. D. came of a consumptive family. She married and had two children and no miscarriages. She enjoyed good health until the end of March or beginning of April, 1895. She then began to perceive a prickling sensation at times in her right foot. Soon she found she could not move the foot, and did not feel clearly when things touched it. The loss of power of motion and of sensation extended up the leg rapidly until she became unable to walk, not being able either to move the limb or to tell when it touched the ground.

On April 27th she was admitted into one of the Dublin hospitals. Leeches and blisters were applied to her spine. The left leg and then the left arm became paralysed. She left this hospital after about a week and came into the Adelaide Hospital on May 9th.

When I saw her she appeared to be a healthy-looking woman—perhaps slightly anæmic. She was unable to move her legs in any way, but she could move the muscles of her body. There was no wasting of the muscles. With regard to sensation, she could feel when her legs or feet were pressed, but a very slight touch was not noticed. She could not well localise where she was touched. Sensation over her body was not lost. There was no marked line of demarcation between the areas of normal and of deficient sensation, and the position of such a zone of demarcation varied from day to day. There was no girdle pain or line of hyperæsthesia. Both knee-jerks were exaggerated, and there was ankle clonus on both sides; plantar reflexes were present. The movements of the left arm and forearm were very feeble, and the muscles were wasted, the circumference round the biceps being 8 in. as against $8\frac{1}{2}$ in. on the right side and $7\frac{1}{2}$ in. round the forearm, as against $8\frac{3}{8}$. Sensation was not impaired in the arm, and, to my surprise, I found the wasted muscles contracted with the Faradic current rather more than did those of the right arm, which was normal. She had retention of urine, a catheter being passed regularly. With the aid of enemas and purgatives her bowels were regulated; the sphincter ani seemed weak, and she occasionally passed fæces in the bed. She suffered from headaches, but otherwise there was no affection of the head. Her spinal column appeared perfectly healthy. All her viscera were sound. Her arm improved after a few weeks, and power was restored in it. Sensation gradually improved in the legs, and after about a month became practically normal. To some extent she became able to move her legs. After about six weeks she could move her knees and ankles a little, but could not attempt to stand. The legs gradually became rigid. She remained in hospital till August 17th—$3\frac{1}{2}$ months. Various

modes of treatment were employed, both by Dr Beatty during a month, during which I was in the country, and by myself, without any marked effect. For the last six weeks of her stay in hospital her condition underwent no change. During this time she was in fair general health as far downwards as her hips. Her legs were weak and stiff; no wasting; exaggerated reflexes; sensation normal; they were of but little use to her. She was unable to pass water, and it was drawn off three times in 24 hours. She was lifted out of bed into an arm chair every day and lifted back in the evening. As she was making no progress, but rather exhibiting more rigidity of the legs—evidence of degenerative changes in the cord—I sent her home in this miserable paralysed condition, having made arrangements with one of the St. Patrick's nurses to see her at her house and pass a catheter for her.

Last Sunday week a woman walked up to my house and asked to see me. She said, "Don't you remember me? I'm Mrs. D." I could hardly believe it. I examined her forthwith, and could detect practically nothing amiss with her. She told me she had been fretting much about her children while in hospital, and was happier when she went home to them. The nurse once passed a catheter for her; after that she never needed it. She continued taking a mixture I had given her containing iron and salicylate of sodium, and the nurse rubbed her legs every day, and soon power began to return. She began to walk—a little at first, then farther—now she can walk four miles. When I examined her all the stiffness of the legs had passed off; ankle clonus had disappeared, and the knee-jerks were not excessive.

With regard to the diagnosis, I believe the case to have been one of myelitis of the dorsal region of the cord, not very severe in degree—at least not sufficiently severe to abolish sensation below the inflamed area. I think there was also some lesion of the gray matter of the left side of the cervical enlargement. Seeing, however, there was weakness and wasting in the arm, while Faradic excitability remained, I think only some of the cells in the gray matter were affected.

The point that struck me most about this case was her perfect recovery after three months of helpless paraplegia without improvement. That there had been some organic lesion of the cord was shown by the course of the disease and by the rigidity and greatly increased reflexes. Within

four months all these passed away and her nervous system was restored to perfect health. I was much surprised at her so complete recovery.

Case II. was that of a young woman, a school teacher, aged twenty-nine years. Her brother had been affected for a long time with what she called "paralysis of the chief nerve of the back." She herself had, about a year or two before, suffered from loss of voice. She had consulted various doctors and numerous therapeutic measures had been employed. Among other doctors, Mr. J. H. Scott treated her, and tells me what she suffered from was undoubtedly hysterical aphonia.

In the autumn of 1894, she came to Marlboro'-street School for a year's training. About the 12th of June, 1895, Dr. Pratt, the Medical Officer of the College, was sent for as she had suddenly become unable to pass water. Stupes and other measures had no effect, and it became needful to pass a catheter. Soon after she complained of tingling in the feet; this extended gradually upwards, and as it passed upwards, the parts first affected became anæsthetic; then she lost power in her legs.

She was admitted into the Adelaide Hospital on June 16th. Her legs were then quite motionless; she had no power in the muscles of her hips and lower part of her back, so that she was unable to turn or move herself in bed. From the mid-dorsal region downwards she could not feel any touch; the upper limit, however, of the anæsthetic area was ill-defined, the sensitive gradually merging into the insensitive portion. There was no zone of hyperæsthesia or girdle pain; reflexes were absent in the affected parts; it was needful to pass a catheter for her. Her bowels were extremely confined; calomel, Epsom salts, castor oil, and enemas, all being employed before any action occurred, and then the motion was passed in the bed; she did not seem to know of its coming. There was no feverishness; and in all other respects her organs were healthy. In fact she was a stout, rosy-faced young woman, who, as far as looks went, appeared in good health, and whose mental state was strangely cheerful or even complacent, considering the grave state she was in.

In this condition she remained for about a week, and then began gradually to improve. Unfortunately a too hot stupe was applied to her back, and thus blisters and a sore were caused, otherwise there was no trouble with her back. By the beginning of July—three weeks from the commencement of her symptoms—sensation

had become fairly good everywhere. There was some tenderness, not marked, over the fifth dorsal spine, and also to a lesser extent in the lower dorsal region. Still there were no reflexes in either body, arms, or legs. By the 20th of July the functions of her bladder and rectum were fully restored. She began to be able to walk.

On August 10th she went to the Rathfarnham Convalescent Home. At that date she could feel perfectly everywhere, and she could walk fairly well. As motion returned in the legs, the reflexes returned too, and that in an exaggerated form, the knee-jerks being increased, the patellar reflex being well-marked, and there being some ankle and rectus-clonus. She was unable to retain her urine more than about two hours; if she did not then relieve her bladder, it would empty itself in spite of her; otherwise she was in very good health. She stayed two or three weeks at the Home and then went home to Co. Sligo.

I have within the last few days seen this patient. She has now no signs or symptoms whatever of her illness, except that she cannot retain her urine more than 1–2 hours by day, though she can do so for a longer time at night. The urine was healthy. I may add that though she can walk very well, she states with evident vexation that she staggers if she attempts to dance.

With regard to diagnosis, the opinions of those who saw her varied, some voting for myelitis, others for hysteria. In favour of the latter were the facts that both she and others of her family had suffered from hysterical manifestations; that the attack had commenced with retention of urine; that although the anæsthesia, paralysis, and loss of reflexes were so extensive, there were no bed sores, and also that the upper limit of the area of loss of sensation was ill-defined and rather seemed inclined to vary from day to day. On the other hand, in favour of myelitis were the passage of fæces into the bed, the complete absence of reflexes. (I am speaking of the early part of her illness.)

For my own part I told the class I thought she had myelitis; and I think the progress of the case supported this view, as when the reflexes returned, they did so in an exaggerated form, with ankle-clonus, &c. However, I am not prepared to say that with the myelitis, there may not have been an hysterical element too.

ART. XIX.—1. *Refuse Disposal in Irish Towns.* 2. *The "Destructor" System.* By D. EDGAR FLINN, D.P.H., F.R.C.S.I., M.R.C.P.I.; Surgeon, St. Michael's Hospital, Kingstown; Examiner in State Medicine, Royal Colleges of Physicians' and Surgeons' Conjoint Board; Examiner in Hygiene, Royal College of Surgeons' and Apothecaries' Hall Conjoint Board; Ex-President State Medicine Section, Royal Academy of Medicine in Ireland.

IT is recorded how the Romans and Greeks cultivated assiduously the custom of dealing with their insanitary surroundings by the process of burning; in fact, they regarded "Fire" as the great panacea for nuisances and uncleanness of every kind, and now on the threshold of the twentieth century it may well be said that history here repeats itself, for we find the sanitarian of our time strenuously advocating cremation as the sole and only efficient way in which to cleanse our cities and towns, and rid them of their filth products and organic *débris*.

The collection and disposal of refuse in large centres of population is a sanitary problem only second in importance to the treatment of sewage. Municipal and local authorities are almost everywhere waking up to the necessity of adopting the very best appliances which the powers of preventive skill have placed within their reach, and it has become the opinion of experts that fire is the best instrumentality whereby the conglomerate masses of refuse which find their way into the household dust-bin, ashpit, and the street refuse, could be rendered innocuous, and the refuse destructors now coming into use are designed with a view of subjecting these to a heat so great that no disagreeable or dangerous effluvia should be given off in the process, and that the products of combustion should be wholly harmless.

It was Lord Palmerston who aptly described "refuse and dirt as matter in the wrong place"—a definition full of significance—and certainly it will be conceded that, wherever the proper place for their existence may be found, it is not in the dwellinghouse or its near surroundings, nor yet should their presence be tolerated unduly in the

streets and thoroughfares, which are our daily and hourly resort. I am aware of more than one important Irish town where the sanitary authorities, having exhausted all the places where it was possible to dispose of the refuse of the town, are now at their wits' end to discover a further means of getting rid of the rapidly-growing amount of refuse accumulations.

I am not here concerned with the cost incidental to the introduction of the "Destructor" system, but of its utility and advantage from a sanitary point of view there are strong proofs. The daily and prompt removal and subsequent destruction of large masses of all kinds of refuse must surely be recognised and admitted to be a benefit to the health of a community. I quite recognise that the question of expenditure may prove for the moment somewhat of a barrier to the introduction of the system into Ireland, yet nowhere is there apparently a more urgent need of reform and improvement indicated.

Cities like Dublin, Belfast, and Cork, where the Corporations have undertaken a general house-to-house system of refuse removal, must sooner or later re-consider the question of the best and most expeditious method of refuse disposal. Every town must necessarily adopt the means that are best suited to its requirements, and it is questionable whether the methods employed in the Irish capital might not be improved upon, and the thousands of tons of refuse that are conveyed to sea utilised in the production of heat and the generation of steam.

To a visitor the appearance of the thoroughfares and bye-ways of the average Irish country town is by no means inviting, and leaves an unfavourable impression. Two principal causes apparently are responsible for this, the one being the absence of any regular or systematic method of refuse removal, and the other cause being attributable to the fact of the existence of a dual control—the County Grand Juries having jurisdiction over the roadways, the public health administration being vested in the Urban or Rural Sanitary Authority, as the case may be—the inevitable result of this dual control being, as often happens, a complete deadlock;—it is evident that no

system of refuse disposal can be properly or efficiently carried out if there be a conflict of responsibility in regard to it, and it is this very conflict of responsibility that hinders the due administration of the Public Health Acts in this important particular. It does seem an anomaly that an urban sanitary authority should not have complete jurisdiction over the roads and bye-thoroughfares within the boundary of its own district, and when it is remembered that there are a large number of towns in Ireland with a population averaging about 500, which are subject to the jurisdiction of Boards of Guardians as rural sanitary authorities, it will be seen that difficulties must and do present themselves in many questions affecting the public health, and thus the sanitary condition of these towns is, in the majority of instances, indifferent to a degree.

This question of the disposal of towns' refuse has recently been attracting the attention of sanitary bodies in the United Kingdom, and great strides have been made in the more important towns in England in the method and manner of collecting and disposing of refuse matter. The last ten years especially have been notable for the various forms of destructors that have come into existence, and for the steadily-growing opinion that the best means for the disposal of refuse is burning. It is, however, notorious that one of the principal drawbacks in the first or early period of the construction of the destructor was the fact that unpleasant vapours were given off during the process of burning. This circumstance has tended to somewhat retard the general adoption of the destructor system; in the more recent forms a remedy has been devised which effectually prevents this. Not long since I had an opportunity afforded me of visiting the original destructors erected in Liverpool, and on the occasion referred to no appreciable or unpleasant odour could be detected. A large number of the more important English towns have partially or wholly adopted the burning system, notably Bradford, Bristol, Buxton, Leicester, Leeds, Liverpool, Manchester, Nottingham, Southampton, Warrington, Woolwich, &c.

It will be conceded that the methods of disposal of

refuse in Ireland are yet primitive to a degree; even in the larger towns very little noticeable improvement has taken place. The appearance of the thoroughfares in any country town gives ample evidence of this. The old-fashioned manure depot or dumping ground is still to be seen in very many places, festering mud-heaps lie in the streets and lanes for many days before being removed, vegetable refuse and house-sweepings of all kinds lie scattered for days without any attempt at collection, and give a very insanitary appearance to the Irish country town. Sub-soil pollution must in consequence inevitably exist. In some instances the refuse is cast into the nearest water-course; in the majority of the smaller villages it is the rule to gather the road and house refuse and manure, and pile it into a large mound or heap within a few yards of the doorway; even in some of the best towns the system yet prevails of carting all kinds of refuse to the nearest waste ground, often near a populous centre. Such rough-and-ready means of getting rid of refuse is happily becoming more infrequent than heretofore; and here it must be remembered that in all these methods there is always the danger that particles of clothing, food, &c., that have been in contact with patients suffering from an infectious disease may find their way into the street refuse-heap, the ashpit, or dust-bin, and ultimately the manure depot.

The question of refuse disposal in Ireland is essentially an important one, and the public bodies entrusted with administrative duties in the country towns do not yet appear to realise its importance, and how closely it affects the public weal. Of course the personal habits of the people must necessarily be a determining factor in its solution.

The old adage, "What is everybody's business is nobody's business," applies forcibly to the subject under consideration. People of education and intelligence are content with a very moderate degree of sanitary protection in their own dwellings and their immediate surroundings; they are slow to recognise the dangers involved in the respiration of bad air, the drinking of impure water, or the

effects of bad drainage; and least of all do they appear to concern themselves with what becomes of the vast amount of refuse matter and filth that must necessarily daily gather within the precincts of their own and their neighbour's dwelling, or the boundaries of the town or village in which they live.

In Ireland, no doubt, the question of the erection of "destructors" for the removal of towns' refuse will be governed to a large extent by the cost it will involve. This is but natural, but the initial expenditure entailed should be an ample recompense for the subsequent health advantages to be derived from this process. A three-cell destructor can be erected at an outlay of a sum varying from £1,300 to £1,500—perhaps a little more—and will suffice for a town up to 10,000 of a population. Mr. Charles Jones, C.E., the inventor of the "Fume Cremator," speaking of the cost of construction of destructors, says: "My own experience in this matter leads me to say that in the majority of cases, excluding excessive cost for foundations, and what may be considered as an ordinary cost for chimney shaft, the cells, including cremator and shaft, ought not to exceed £400 per cell, and in some cases I have details showing the cost from £200 to £250 per cell. This has been the case at Winchester." This estimate of the expenditure necessary for the erection of a destructor does not appear to be extravagant, and the cost of erection of a two-cell destructor which would suit an average town in Ireland should not prove an excessive item or an insurmountable barrier to its adoption. In several important towns—notably Hastings, Leicester, Southampton, Ealing, successful efforts have been made to utilise the heat generated by the destructor, and test its steam-producing properties, the power thus obtained being used in pumping and working machinery of various kinds; it is also being used for the purposes of electric lighting at Southampton, St. Pancras, and Ealing. To the municipal economist, as well as to the sanitarian, the disposal of refuse by burning must eventually commend itself, and convincing evidence is being established to show that it is the most economical, sanitary, and scientific method of getting rid of town

refuse, and though objections have been advanced that the burning of such refuse means a wholesale waste of materials, yet there is ample and undeniable proof that the heat generated by a destructor is infinitely more valuable than any return from the sortings of refuse—an antiquated and filthy proceeding.

In the more important Irish towns, such as Dublin, Belfast, and Cork, the disposal of refuse of late years has engaged the attention of the sanitary authorities, and these towns bear visible evidence of the improvements effected by the several corporate bodies undertaking the systematic collection and disposal of refuse. In Dublin the city refuse, consisting of the scavenge from paved streets, dry ashpit refuse, and the contents of dust-bins (described as unsaleable scavenge), is conveyed to sea in a hopper barge, thousands of tons of material being thus yearly disposed of, which might be utilised in the production of heat, and its transit no doubt costing a large annual outlay.[a] This system was largely availed of in Liverpool up to the year 1891, and at least 80 per cent. of the refuse of that city was conveyed to sea by steam barges. Since 1891 it was considered desirable, from a health point of view, to introduce the burning system, and destructors were erected; and the Corporation are said to be so thoroughly satisfied with the results that the destructor system by burning is now altogether adopted there; each cell or furnace at Liverpool consumes between seven and eight tons of refuse per day of twenty-four hours, and the heat which is generated in the combustion generates steam in the boiler, and is used both for a mortar mill and for a disinfector installation on the "Washington Lyon" system. It is computed that about one ton of refuse is collected daily from one thousand inhabitants, and it will thus be seen that in Ireland, where there are so many small and medium towns, the erection of a one-cell destructor would suffice in many instances, and the cost of erection, to say nothing of its health advantages, would, in a few years, repay itself. Unquestionably, the days of the manure-

[a] The Dublin Corporation have recently decided on erecting a four-cell destructor on the "Warner" principle.

depots and dumping grounds are numbered, and the whole question of refuse disposal as at present understood must, sooner or later, be considered by our public bodies. The improvements noticeable in such towns that have adopted a system of public cleansing and gathering of town *débris* at frequent intervals is most marked. In a former paper[a] I drew attention to this and to the fact, as evidenced by the reports of several medical officers of health, that not only the zymotic but the general death-rate had considerably decreased in those towns where a systematic removal of towns refuse and public and domestic cleansing was undertaken by the Sanitary Authority.

The destructor system appears to be the most economical and at the same time the most sanitary way of getting rid of refuse, and it is evident that we are fast approaching a time when its general adoption for cities and towns will be the rule. The medical officer of health and the engineer to the London County Council, in a joint Report as to the value of "destructors," mention the following points as demanding special attention:—(1) "The temperature obtained should be sufficiently high; (2) the duration of exposure to high temperature should be sufficiently long; (3) all the vapours escaping from the refuse should be heated to a sufficient extent, and there should be no possibility of the escape of any undecomposed vapours into the chimney shaft." It is evident from this Report that a perfect destructor should give a powerful and regular heat, and that there should be perfect combustion, and no escape of offensive odours.

In regard to the latter question, at Leicester (where, previous to the erection of destructors, there was considerable difficulty as to the disposal of the town refuse), the process of burning is very satisfactorily carried out. The destructor buildings are only a few yards from a large Board School, and there are a considerable number of houses immediately adjoining; here there has been a six-celled destructor at work for some years, with "fume cremators," and there is no complaint of any unpleasant

[a] The Influence of Public Cleansing on the Mortality of Towns. February, 1893. Royal Academy of Medicine, Section of State Medicine.

or noxious odours, and it is intended to erect two other destructors—one of six cells, and one of ten cells. In Whitechapel a refuse destructor is placed in the midst of a very populous district, and within a few yards of dwelling-houses; and at Ealing, where a destructor has been working for ten years, it is situated within 380 yards of houses of a rateable value, ranging from £120 and upwards, and within 180 yards of two isolation hospitals, and within 600 yards of a convent and large military college. At Hornsby and Woolwich the destructors are built in close proximity to dwellinghouses, and the result is satisfactory. The earlier form of refuse destructors encountered a great deal of opposition, and justly so, as in their construction they were, no doubt, a nuisance to the immediate neighbourhood around them—partly from the noxious odours evolved, and from the escape of unburnt matter, such as particles of paper, rags, dirt, &c., from the tops of the destructor chimney shaft—and it is only in recent years that anything approaching a successful form of destructor was brought into work. To Mr. Charles Jones, C.E., the unquestionable credit is due of having devised a remedy for combating the offensive odour. The "Fume Cremator," which bears his name, is now attached to most, if not all, of the destructors; it is placed between the furnaces and shafts, thus preventing the escape of offensive vapours as well as of particles of unburnt dirt, &c. Further, the odours given off in the first stage of the burning process—the drying period—were, in the earlier times of the destructor system, very perceptible and a strong cause of complaint; the heat generated in the creamator is very intense, from 1,500° to 1,800° F. of heat being generally maintained.

Dr. William Odling, of Oxford University, not long since having been asked by the Sanitary Committee of the Bradford Corporation to make a personal examination of the Refuse Destructors in Bradford, and to report thereon, describes the process as follows:—

"(1.) Speaking generally, the process consists in setting fire to the refuse, as collected, and allowing it to burn itself out. This burning is conducted in long, nearly horizontal, furnaces, called destructors; the refuse, just as it is

delivered by the carts, being introduced at the slightly higher end or back of the furnace, and the ash or clinkers being raked out at the front and slightly lower end, where the fire-bars are situated. It is noticeable that the burning of refuse is carried on without resort to any fuel other than the combustible matter present in the refuse itself; and that, despite the frequently wet state of the refuse, its burning in the destructors takes place steadily and completely. The burning of the refuse constitutes further an available source of heat, actually made use of at one of the stations to raise steam for the supply of an engine used for crushing and grinding the clinkers of the refuse into a valuable mortar. It is impossible for anyone not to be struck with the very efficient way in which the destructors do their work, having regard to the quality and character of the refuse they so completely dispose of in the course of but a few hours. This continuous and rapid destruction of the town refuse as fast as collected, with avoidance of all decomposing and offensive accumulations, cannot but be of great sanitary advantage to the town."

"It must be admitted that the burning process, as at present conducted, is not wholly unattended with a discharge from the chimney shaft of a little unconsumed vapour, which, under some conditions, may be recognised at a distance as offensive; but this offence, at the worst, is as nothing compared with the offence and injury to health which are so successfully obviated by the rapid destruction, daily effected, of tons upon tons of objectionable matter which must, in some way or other, be dealt with in the Borough, as its deposit elsewhere would not now be permitted."

Since Dr. Odling's Report, "fume cremators" have been constructed in connection with the refuse destructors at Bradford, and Mr. Remmington, F.C.S., states that "the effect of the gases from the furnaces passing through the fume cremators appeared to be that all compounds are decomposed, and scarcely a vestige of any that can be construed to be offensive or obnoxious escapes, and the result is as nearly perfect as it can be."

There are several "destructors" now in use, Fryer's,

Warner's, Horsfall's, Beaman and Deas' being amongst the principal, each claiming its own special advantage in the treatment of refuse.

The fume cremator (Jones), which came into existence with the object of destroying any noxious vapours that might be given off the destructor, consists of a reverbatory arch, with rings of fire-bricks placed in the direction of the gases. Ribs of fire-bricks projecting from this arch serve to deflect the gases, and direct them on to the top of a red hot mass of fire. An intense heat from 1,000 to 1,500 degrees is maintained at little expense of fuel, fine coke breeze alone, or with the ashes screened from the refuse, being all that is required, together with a supply of air beneath the fire-bars, and a further supply to feed the vapours as they pass into the cremator. The cremator appears to have met with comparative success the objection raised as to the noxious odour emitted in the process of combustion by the destructor. The additional outlay involved in the construction of a fume cremator has hitherto somewhat hindered its more general introduction, but of its utility in dealing with offensive gases there can be not the slightest doubt. Horsfall's destructor claims the advantage that the flues are arranged in such a manner that the outlets for the products of combustion are over the hottest part of the fire, so that all the fumes given off by the refuse in drying have to pass through the hottest part of the furnace before they can escape to the chimney, and are thus "cremated" within the furnace itself, no extraneous fuel being required. Both "Warner's" and Beaman and Deas' destructors claim that complete combustion and the destruction of offensive gases take place within the furnace or cell itself, and before the shaft is reached.

A series of questions were submitted some time since to the authorities of 46 large towns in England, where the destructor system of refuse disposal is in operation, one of the questions being, "Have complaints ever been made as to noxious odours from destructor or otherwise?" In only a very few places—hardly one and a quarter per cent.—were slight complaints made of any odour being perceptible.

As an important question affecting the public health, the destruction of dirt and all organic *débris* by fire should commend itself to the consideration of every sanitary authority, and it is only a matter of time when we may hope to see the system generally adopted in the United Kingdom.

ART. XX.—*Case of Choreic Movements limited to Right Shoulder and Arm.*[a] [Case exhibited]. By WALTER BERNARD, F.R.C.P.I., Londonderry.

THE case which I have brought under the observation of this Section has afforded me an opportunity of reminding you that many of us do not attach sufficient importance to slight muscular pains, cramps, and spasmodic affections, until they show signs of leading up to progressive changes, which changes, in time, grow to complete and evident disorders of movement, as the history of my present patient will illustrate.

Those engaged in general practice for several years have experienced from family and personal histories that spasms and contractions are frequently associated with the toxic agencies of gout, rheumatism, and sore throats, and are mostly due to defective elimination of such agencies, involving a disturbance of the nerve centres, and exciting cortex and spinal disturbances. The pathology of neuritis has been sent forth more than eighteen years ago, but is not, as yet, fully understood, or made sufficiently clear, and many of our cases of peripheral neuritis within the skull and spinal column are still perplexing.

To explain more fully what I advance, I have copied a few short notes from my case book, the reading of which will not occupy more than eight or ten minutes of your time :—

CASE I.—In 1887 a spinster lady, aged seventy, whom I had been attending from time to time for gouty symptoms and small joint pains, was suddenly roused out of her sleep by numbness in her left arm, and severe pain in the *left* ring finger, which she discovered was flexed on the palm. An effort of the will was unable to

[a] Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, February 28, 1896.

extend it, and she had to lift it into its normal position. She stated that this finger "shut down" at night *only* while asleep, and that the *right* ring finger only during the day, while occupied in cutting flowers or bread, or manipulating buttons on her dress. Elimination with minute doses of calomel, sulphate of soda, and other gouty remedies, prolonged the intervals of the seizures to such an extent that for the next nine years, and up to the time of her death, she was but seldom troubled with these distressing and painful contractions.

Case II.—Transitory nystagmoid oscillations, and slight facial spasms, I have seen before and after pregnancy in a woman who has a sister in our asylum. They were transitory, and did not pass into puerperal mania.

Case III.—Charcot's vague expression of muscular exhaustion is borne out by a case which I saw along with Dr. Craig, of Londonderry. A gentleman beyond the middle age, very intelligent, of active business habits, with a neurotic and gouty tendency, and with too much mental strain, became prostrate, and lay listlessly and drowsily in bed. No symptoms pointed to cerebral or spinal disorders, subjectively or objectively, but blood spots appeared on his legs, and as they cleared off his perceptions became more keen. Again, the blood spots returned, and he lapsed into the same listless condition. A storm supervened somewhat akin, but not so pronounced, as Jacksonian epilepsy. The seizure was but momentary, and as his perceptive faculties became clearer, he complained of occipital and parietal headache. Prior to the slight convulsive attack he had tender patches here and there on the scalp, two of which were well marked, one on the occiput, and one on the vertex. Symptoms of neuritis in the lower limbs followed, from which he quickly recovered. He is now convalescent.

Case IV.—Another well-marked case due to the toxic agencies of gout and rheumatism commenced with lumbago, passed into sciatica and sacro-iliac, fixed pain and tenderness, associated with wasting of the limb, cramps, twitchings, numbness, and partial loss of power and sensation. The rectum and bladder became involved later on. This case, though tedious, made a good recovery.

Case V.—On the 22nd of last October a boy, aged fifteen years, was brought to me by his mother. He is an only son, has but one sister. His family history is unimportant. Up to November,

1894, he was in good health, when he was sent as a boarder to school. In the following month he had to go to bed with a giddiness, headache, and vomiting of food immediately after meals. He soon got well, however, and came home for his holidays. On his return to school his illness also returned, and though he could keep well up to the other boys with his lessons, he was unable to do so in play and exercise. On getting him to walk in my room, he shuffled, turned his toes outwards, and planted them first on the ground. While making this attempt, he fell forward, the left side of his face twitched, the angle of the mouth on that side was drawn up, and the left upper lid dropped. He became pale, but did not lose consciousness. Sensation in lower limbs diminished. Knee jerks varied. Discs examined by Dr. Donaldson showed double optic neuritis, more marked on the right side than on the left. Our diagnosis was tumour on the brain. Dr. Gowers, who had him under continued supervision in hospital, wrote on the 12th of last November, "that the localising symptoms were dubious; that there was a nystagmus, loss of the left knee jerk, slight weakness of the left side of the face, bilateral weakness of the orbicularis palpebrarum, and extreme nystagmus; left sided spasm of the face, tonic, clonic, and left sided parietal and occipital headache."

Again, on the 5th of February last, Dr. Gowers wrote that "Mr. Horsley came round to his opinion that there is an infiltrated glioma of the pons." Mr. Horsley removed the medial part of the occipital bone on each side. The operation was too late to save sight, and the boy is blind, but the sight may improve when the neuritis subsides. The operation has lessened the headaches, and the vomiting has ceased, but his powers of locomotion have diminished. He returned home with his mother last week.

As brain surgery has of late been attended with so many good results, I hope the case which has been exhibited to-night will elicit discussion as to the propriety of operative measures for the relief of the persistent spasms. Its history is as follows —

Case VI.—M. MacD. is aged twenty-two years. He first consulted me on the 16th of January, 1896. He is a tall, stout, healthy young man, rather slow intellectually, but by no means feeble-minded. There is no family history of nervous diseases, except that his mother is passionate, moody, and somewhat peculiar. He is a twin, had whooping cough and measles without any bad effects. When about fourteen years of age it was noticed at school

while he was writing that there was a jerking movement about his right shoulder. On his visit to me the muscles of the right shoulder were in a constant state of movement quite independent of the will. The flexors of the fingers were also in frequent action. He is unable to put his right hand to the top of his head, to button his coat, to write, or to feed himself with his right hand. Shoulder, arm, and hand are at rest only when lifting heavy weights, pushing forward a cart, or at manual labour requiring much effort. The movements are worse on Sunday, and are increased by rest. Heat and cold make no change. Movements are not altered by closing the eyes. The field of vision is normal. When standing, he keeps his hand on a chair to steady his arm. His family say this constant movement is present during sleep. The muscles round the shoulder, arm, and fore-arm are remarkably hypertrophied, and there is some lateral curvature of the spine. He walks with his hand a little behind him, the arm being stretched out.

For the last year the friends say that the jerky movements have increased. He never had hemiplegia, and the causation is obscure. It is not secondary to disease.

ART. XXI.—*Note on Perforating Ulcer of Septum Nasi and Vomer.* By H. S. PURDON, M.D.; Consulting Physician to the Belfast Hospital for Diseases of the Skin; also to the Consumption and Chest Hospital.

I HAVE met with several cases of ulceration of the septum nasi both in hospital and private practice, generally extending through the substance of the cartilage, or what is rarer, vomer. As a rule such cases occur in weakly constitutions, frequently connected with lupoid disease of the nose, or are of a syphilitic character. In the former case there may be only a deposit of a tubercular nature on the mucous membrane; however, the disease is often more extensive, involving the skin of the alæ nasi. One of the first symptoms is a congested condition of the mucous membrane covering the septum nasi or vomer, eventually ending in ulceration, which, as a rule, if not arrested, eats through either the septum, or, if higher up, the vomer. The perforation when healed leaves a little hole varying in extent from the size of a pin's head to that of a threepenny piece. Mr. T. Holmes

in his "Treatise on Surgery," referring to abscess of the septum, remarks—"If the septum is perforated by a small opening, and the unpleasant whistling sound distresses the patient, his condition may sometimes be relieved by making the opening larger."

As the disease is often of a syphilitic character, other cutaneous lesions will be observed, and that nearly always a papular syphilide, occurring about the mouth, nose, cheeks, or ears. The ulceration of the septum in such cases has a decided tendency to assume from the very first a circular or ovoid form, whilst the eruption on the skin is, as a rule, not extensive. In a few instances the skin of the face exhibits the *Roséole Papuleuse* of Bazin, which is often attended with a peculiar mode of desquamation described by von Zeissl, the uplifted epidermis peeling off in laminæ of the same size as the papule. Dr. Taylor (*American Journal of Syphilography and Dermatology*), has remarked that when a papular syphilide is developed on "portions of integument which joins mucous membranes, they constitute *Condylomata Lata*, and upon mucous membranes, the mucous patches. The lesion is the same in each case, and the difference of appearance is due to the varying structure of the membrane upon which they are developed." Something similar occurs in the case of the nasal mucous membrane as regards those of a syphilitic character. In the case of tuberculous ulcer, impairment of nutrition is evidently the cause. The observations of Cruveilhier prove the existence of tubercles in the substance of the various mucous membranes often noticed in the mouth, and found on the tonsils, palate, tongue, gums, and lips. Probably the view held by M. Gabler is correct—that engorgement of the glands takes place followed by inflammatory action. Two cases occur to me, as I write these "rough notes," in which ulceration of the septum nasi took place, both of a lupoid character—one especially interesting, as the cause of outbreak is likely correct. Miss D., aged twenty-four, some three years previously, nursed a favourite sister through a fatal illness due to phthisis. She frequently lent or gave her pocket handkerchief to her sister to expectorate into. On one occasion she suffered from an ordinary "cold in the head" followed by a slight

abrasion of the mucous membrane, and she attributed her disease to using the same handkerchief to "blow her nose with" on various occasions, after having been used by her consumptive sister.

As regards treatment, the application of a powerful caustic to the little ulcer and surrounding parts is necessary—probably required more than once. That eminent Dublin Physician and Dermatologist, the late Dr. J. M. Neligan, recommended for serpiginous ulcerated lupus, the application of the acetate of zinc, touching the affected parts with the solid salt. I have generally used the solution of the acid nitrate of mercury, followed by some soothing application such as an ointment of the nitrate of bismuth, formerly recommended by Dr. Pereira in ulceration of the septum nasi, but useless by itself, unless the caustic is freely used in the first instance. Of course cod-liver oil combined with the syrup of the lacto-phosphate of lime, nourishing food, &c., must not be omitted. For the syphilitic variety, Ricord's pills of the green iodide of mercury have proved useful.

ART. XXII.—*An Interesting Case of Ruptured Tubal Pregnancy, with Hæmatosalpinx of the Opposite Side.*[a] By ALFRED J. SMITH, M.B., M.A.O., R.U.I., Gynæcologist to St. Vincent's Hospital.

I MUST ask your indulgence while I read for you notes of an interesting case of ruptured tubal pregnancy:—A Mrs. W., aged thirty-three, married eleven years, had four children, the youngest aged two and a half years; she nursed all her children, and weaned her last child when it was one year and five months old. Her menstruation returned one month after she ceased to nurse, and came on regularly every month, duration six or seven days, the amount being heavier than before her last pregnancy; she suffered no pain.

The change, which began on December 17th, 1895, was ushered in by a severe pain referred to the bottom of the

[a] Read before the Section of Obstetrics, in the Royal Academy of Medicine in Ireland, on Friday, March 6, 1896.

abdomen, and was accompanied by so heavy a red discharge that the patient was admitted into St. Vincent's Hospital. I saw her a short time after her admission; she stoutly refused to permit any vaginal examination, although her condition was alarming and caused me much anxiety. The rest in bed stopped the hæmorrhage, and the patient felt so well that she left the hospital without permitting me to make a single examination. However, she returned fourteen days subsequently suffering from a return of the hæmorrhage, which came on without any pain. I had no difficulty on this occasion in being permitted to make a vaginal examination. I put the patient under ether and found the uterus displaced forwards, the fundus not appreciably enlarged. A cystic tumour was easily mapped out in Douglas' pouch, which conveyed the impression of being lobulated. The tumour could not be pushed out of the pelvis; it wobbled from side to side, and it felt quite unlike any other cyst that I had previously examined. I made the diagnosis provisionally of a tubal pregnancy, and urged the patient to undergo abdominal section. Accordingly, on Jan. 29th of this year the patient was placed on Trendelenburg's table and the abdomen was opened. Mr. McArdle kindly assisted me. I found the cyst on the right side bound down by extensive adhesions; on separating these my fingers entered into a cavity full of dark, tarry blood clots which escaped and soiled the pelvis. The amount of fresh hæmorrhage was very slight, as I quickly ligatured the Fallopian tube close to the uterus and the ovarian artery. I then separated the sac and douched out the pelvis with warm saline solution; no trace of a fœtus could be found.

I then examined the cyst on the left side; it appeared similar in character to the one I had just removed but smaller. I was able to separate the adhesions which bound the cyst to the pelvic wall and rectum without its bursting; however, on drawing the cyst up after being separated, it unfortunately burst, discharging a quantity of dark thin blood—no clots. The pedicle was found to be too broad for single suture; I therefore employed an interlocking chain suture, using stout silk. On douching out with saline solution to remove the blood a mass like a small fœtus was seen,

but it slipped from my fingers and escaped, an exhaustive search proved fruitless; I could not find it.

The general peritoneal cavity was so thoroughly protected by gauze sponges that the general peritoneum was not soiled. I therefore lowered the Trendelenburg's table and contented myself with just flushing out the pelvis with warm saline solution, temp. 99° F. I did not sponge the pelvis, or aspirate excess of fluid, but left in a drainage-tube.

The patient suffered very much from thirst, and had so much pain after operation I had to administer 10 grs. of phenacetin, the drainage-tube was removed after twenty-four hours. Recovery was rapid and uneventful.

Remarks.—The chief points of interest seem to me to be—1st. The question of diagnosis. 2nd. The pathological condition found during operation.

The Diagnosis.—There was no history of pregnancy; the menstruation was quite regular up to the very day when she was first seized with the abdominal pain, and heavy menstrual flow. The pain, it is true, was referred to the lower part of the abdomen, but was not so severe as to cause the patient to collapse. She was able to walk to the hospital without assistance. Still, on vaginal examination, nearly all the typical signs of ruptured tubal pregnancy were present.

Pathological condition found at operation.—I am quite satisfied that the condition found on the right side was an example of "tubal abortion." The patient became pregnant in the ampulla of her Fallopian tube, and aborted on Dec. 17th. The large mass of blood clots became encapsuled by protective peritonitis, and was opened into by my fingers while separating adhesions. As is well established, the fœtus is rarely found in tubal pregnancies of this early period.

As to the cyst in the left side, its exact nature is not so clear. It was undoubtedly full of blood, and seemed to be in the outer third of the Fallopian tube, and had certainly all the macroscopic appearances of a tubal pregnancy. But the microscopic examination throws a different light on the subject, and proves it to be not a case of tubal pregnancy. The interesting query now is how to explain the hæmorrhage into the outer third of the Fallopian tube.

Prof. McWeeney has made a most careful examination of

the specimens. His report I have now much pleasure in placing before you:—

"The specimen consists of the two ovaries, with part of each broad ligament and the outer three-quarters of the Fallopian tube of each side. Each tube is enormously dilated towards its abdominal end so as to form a cyst.

"Ovary No. 1 (the right?) is enlarged to the size of a pigeon's egg. It is dead white, cicatrised, and fibrous externally, whilst internally it is riddled with cysts averaging the size of a pea. These contain proteid material coagulated by the alcohol in which the specimen is preserved. Close beside the ovary is the Fallopian tube, the walls of which are greatly hypertrophied. Towards the abdominal end this opens out into a cyst-like expansion, with walls a quarter inch thick. The convoluted tubal mucous membrane enters this cavity and can be traced for some distance across its inner wall. The whole inner wall is thickly coated with freshly-coagulated blood, which presents a peculiar shaggy villous texture. Externally the cyst is coated—on its peritoneal aspect—with shreds of fibrinous exudation. On the outer aspect of the cyst wall is a large opening, two inches long, bounded by the everted inner wall. Along the margins of this there are fringe-like structures doubtless identical with the tubal fimbriæ. From the appearances just described I have no doubt that this structure represents the sac of a tubal pregnancy cut short by hæmorrhage and subsequent operation at an early stage of development.

"The other ovary is reduced to a mere shell of cicatricial tissue, lying like a cap on the wall of a sort of cyst, which is somewhat smaller than that just described, and the wall of which is much thinner. In this case, also, the cavity of the cyst is continuous with that of the Fallopian tube, the mucous membrane of which opens out on its inner wall. The inside of this cyst is much smoother than that of the other, and shows only a few shreds of inflammatory lymph. Part of the outer surface is coated with similar material. The question as to its nature could be settled only by microscopic examination, and accordingly two pieces were removed, one from a smooth part and the other from a shaggy part of the inner wall, embedded in celloidin and sectioned. The cyst wall was then found to consist of smooth muscle-fibre and connective tissue, covered on the inside with a more or less interrupted layer of high columnar epithelium, part of which could be seen to be ciliated. The shaggy part of the wall consisted of similar structures, the processes being due to duplicature and infolding of the mucous membrane. The

whole of the cyst wall was infiltrated with inflammatory cells, whose fragmented nuclei could be seen even amongst the lining epithelium. Here and there the inflammation had proceeded to necrosis. No trace of chorionic villi or other ovular structures could with certainty be identified.

"*Diagnosis.*—The case from which these specimens were removed presents the highly unusual combination of tubal pregnancy on one side, together with great dilatation of the tube, and hæmatosalpinx on the other. So suggestive of a second tubal pregnancy was the appearance of this latter tube, that nothing but a careful histological examination enabled the diagnosis to be made."

ART. XXIII.—*Modern Tendencies in the Treatment of Disease.*[a] By ALFRED R. PARSONS, M.B., B.A., Univ. Dubl.; F.R.C.P.I.; Physician to the City of Dublin Hospital.

(*Continued from page 239.*)

Influence of Mind on Body.—Few more difficult problems present themselves for solution than the estimation of the degree to which therapeutical results are to be explained by the direct action of the agent used on the body, or its indirect action on the same through the mind. That psychical influences have always played a part in the cure of disease can be traced through all literature back to very remote periods. The charms of the fourth, fifth, and sixth centuries, the black art of the middle ages, have had their counterpart in these latter days in mesmerism, hypnotism, and faith-healing. Far be it from me to deny the possibility of miracles, or the direct intervention of supernatural power; I only contend that such cures are explicable on much simpler hypotheses. We have not to travel to Lourdes or Bethshan to see such miracles, each physician can observe them almost in his daily practice. Consider for a moment the class of cases which are especially subject to emotional influences. We roughly divide disease into two great groups—functional and organic—and under the first class we include groups of symptoms not attended by any detectable alteration in the tissues or structures which the symptoms suggest.

[a] Being the Presidential Address, inaugural to the Session of 1895-96, delivered before the Dublin University Biological Association.

To this class we apply such terms as hysteria, hypochondriasis, or the more fashionable neurasthenia. These are not, as we are very apt to conclude, feigned or imaginary diseases; to the patient the pain or paralysis is just as real as that produced by demonstrable organic disease. On the one hand they are difficult at times to distinguish from mere malingering, and on the other from actual organic disease. Such cases are possibly due to some disturbance in the relative appreciation of impulses reaching the sensorium from different parts of the body. Such affections are, I think, most easily cured by what I may perhaps best describe as "the expulsive power of a new idea." If you can but persuade the patient that he is well, he is well. This new idea may be born suddenly in times of great psychical excitement, so that the blind will suddenly see and the lame cast his crutches from him; or it may gradually arise by the quiet and confident assurance of the physician that there is no cause for anxiety, nor the slightest trace of any organic disease. The latter is sometimes sufficient with the better-educated classes, but among our dispensary patients such an assurance would not be of much avail except supported by a bottle of medicine. The nature of the contents of the bottle is of no importance; patients after using the aqua camphoræ of the B. P. for the relief of insomnia, pain, or abnormal sensations, have frequently admitted that they never took any medicine which did so much good.

Not only, however, in the treatment of so-called functional disease, but even where we have to deal with undoubted organic morbid processes must we remember the potent effects of the mind and will on the course of the disease. Hope of victory and determination to live, probably, play as great a part in the struggle of the organism against its microbic invaders as they did in the olden days of hand-to-hand combat in the tournament. It is, therefore, a physician's duty to inspire as much hope and confidence in his patient's mind as he legitimately can. To this end frequent examination, care in details, patience, and the power of seeing the brighter side of things all tend. A bright sympathetic nurse and a cheerful well-ordered room add their influence in the same direction. Most of us will agree that once a

patient with serious organic disease makes up his mind that he is going to die, his physicians have lost one of their greatest aids in guiding his case to a successful issue, while even in absolutely hopeless cases life is sometimes prolonged by a mere determination to live. As some one has said—

> "Even death stands still,
> And sometimes waits an hour for such a will."

Recognising, therefore, more clearly perhaps than our ancestors, the important action and reaction of mind and body, we are bound, as far as we truthfully can, to turn such powerful forces in a direction tending to the recovery of our patient.

Drugs.—I have already referred to the position which I think drugs tend to hold in the armamentarium of the physician. Means by which you can relieve or cloak symptoms, but which probably exercise no directly curative effect on the disease; agents which, if our patients' feelings were the final tribunal for determining their merit, would hold for ever the high place they have occupied in the past, but which accurate, scientific, and experimental investigation demonstrate to be of less and less value the more complete our knowledge of the ætiology and pathology of any morbid process becomes. That this is the view accepted by some clinical physicians of considerable experience, is borne out by the following passage taken from one of our most recent text-books on Fevers. The author, Dr. J. W. Moore, after devoting some ten pages to the drug treatment of typhoid fever, concludes by stating, "although I have felt it my duty to bring forward the foregoing long list of drugs, which are now employed in the treatment of enteric fever, I thoroughly agree with Dr. Hilton Fagge"—who was one of the most accomplished physicians and acutest clinical observers England has produced within recent years—"when he says that at present the most rational and successful treatment of this as of most other fevers, is to help the patient by rest, suitable food, and good nursing; to watch carefully and intelligently, and to interfere when complications arise, but not before."

Even, however, in the administration of drugs there has been a marked improvement. Our prescriptions are not so long or complicated as those of the earlier physicians. Let

me enumerate some of the ingredients of a very celebrated prescription for a compound termed Theriaca, because it contained viper's flesh. It was a complicated opiate electuary containing about 63 ingredients, among which, besides poppy juice and the vipers, were pepper, rose leaves, iris, liquorice, cinnamon, nardus, cassia, crocus, frankincense, balsam, gum, fennel, cardamoms. It is said to have been employed for 2,000 years, and was the subject of a work by Galen. Even assuming any distinct result to be dependent on such a medley of substances, it would be almost impossible to determine with which of the ingredients the result was associated.

Again, we have to acknowledge our indebtedness to the chemist for having, in many cases, isolated the active principles of our drugs, thereby enabling us to diminish the bulk of our medicament, and to regulate much more accurately its dose. The introduction of soluble capsules aids us in concealing the unpleasant taste of many substances, and the hypodermic administration of alkaloids has, though liable to great abuse, been of much service in the relief of symptoms.

As a result of these improvements, combined with careful experiments on animals, the administration of drugs tends daily to become more rational and scientific. It must, however, I fear, be admitted that increased knowledge does not increase our hope that in drugs we have antidotal substances to the poisonous products of the metabolism of bacteria. On the contrary, I think there are few physicians more sceptical than our professors of materia medica. In a word, it seems that the more one knows of drugs the less confidence one has in their curative properties as distinguished from the mere relief of symptoms.

If the foregoing statements truthfully represent the position of the physician to-day in the treatment of disease, it will appear to you that, however interested he may be in the great fray between the patient and the disease, into the actual fight he cannot enter. He stands on the hedge the most interested of spectators, the most anxious for success, ready to cheer on his man when courage is failing, to restrain him when victory is assured, but he cannot strike down the antagonist, for he knows of no way past the boundary into the arena. Like the attendant on the Knights of the

Tournament, the physician may figuratively fasten on the warrior his armour, may close his vizier, sponge his heated brow, bind up his wounds, bid him hope and be undismayed, but fight for him he cannot. In the inmost recesses of the patient's organs and tissues must the all-important struggle be fought out to a final issue. The fight is *à outrance*.

It may indeed be asked, if all this boasted increase in the ætiology and pathology of disease has added nothing to the therapeutical resources of the physician? Has it merely shaken our belief in the drugs to which for centuries past our fathers have pinned their faith? Is the total result of this new medical philosophy a blank negation, an acknowledgement of one's helplessness in the mortal strife when your aid is most sought after?

In answer to such questions I would beg to submit that, if modern investigation has shaken our faith in drugs, it has greatly increased our belief in Nature. If we can no longer assert that by our drugs we cure disease, we can recognise the beneficial hand of Nature, and claim the honour of assisting her. As we observe the phthisical lung, and note the attempts she made to isolate the disease, and prevent infection of the rest of the organ, or look at a cirrhosed liver and mark her efforts at the establishment of a collateral circulation, or as we watch the shriven, shrunken valves, and recognise the increase of the driving force behind them in her endeavours to overcome the obstruction, we must conclude that for each individual she is doing her utmost to bring the struggle to a successful issue. Daily we recognise more and more that it is not our business to oppose, but to assist her, and hence the diminishing tendency to actively interfere with symptoms so long as their intensity does not become so great as actually in themselves to produce a fatal issue. Had no other results accrued from our increased knowledge than those I have mentioned, we have, I think, been great gainers in learning that our duty as physicians is to place our patient in that condition in which nature will have the fullest scope for manifesting her restorative and recuperative energies. But dissatisfied with such results, we are seeking from nature her inmost secrets, and the means by which she maintains man in health, or, if diseased, attempts to restore him to that condition,

and this quest has not been in vain. By patient observation at the bedside, by experimental work in the laboratory—the results being again controlled at the bedside—we have learned that when from some unknown cause—some atrophy, for example, of the gland—she fails to elaborate one of her internal secretions, the physician may, by its administration, produce a marked improvement in the aspect of the patient, and even an entire abolition of the symptoms. At present the most typical example of this is afforded by the marvellous results produced in cases of myxœdema—a disease dependent on atrophy of the thyroid gland—by the administration, either by the mouth or hypodermically, of the same gland obtained from the lower animals. The gland itself may be used, or its glycerine extract; probably, in our entire ignorance as to the exact nature of this powerful substance, the gland itself is best administered. We admit that by this line of treatment we are not curing the disease; we only prevent its manifestations by giving to the organism that very material which it lacks. The limitations of this method are distinct. A morbid condition, due to the absence of one of the internal secretions dependent on the atrophy of some particular gland, is exceedingly rare. And, furthermore, we must bear in mind that it is only in cases in which the symptoms are entirely dependent on non-secretion, and not due to disease in the gland, that we can hope for such results. We cannot, I think, expect marked improvement—*e.g.*, in tubercular disease of the supra-renal capsules, where the symptoms are not only dependent on the non-secretion of these glands, but also on the poisonous products of the metabolism of the bacteria in the diseased tissues. The former group may be expected to improve considerably under the administration of supra-renal extract, but in the latter we can, I think, anticipate no diminution from such treatment.

This advance in therapeusis has been due not to mere empiricism or guess work, but to careful scientific investigagation. Clinical observation taught us the association of atrophy of the thyroid with that group of symptoms to which the term myxœdema has been applied. Experimental investigation demonstrated the production of identical symptoms by excision of the thyroid in the lower animals.

Removal of the gland for disease in man was attended with like results. The intimate connection between the organ and the symptoms was indisputably established. The next step was an attempt to remove the symptoms produced by an atrophy of the gland by the hypodermic injection of its extract; and, lastly, it was found that equally brilliant results could be obtained by its administration by the mouth.

Much valuable work has been done on the internal secretions, but far more remains to be investigated. The absence of any other one of the internal secretions has not yet been definitely connected with any group of symptoms, and yet the pharmaceutical chemist has already manufactured tabloids of almost every gland or organ in the body from the cerebrum to the testes. But here, surely, our motto should be *festina lente*. We must await the results of careful clinical observation and experimental investigation before we can determine the symptoms associated with deficiency or absence of any of the internal secretions. And when that has been accurately done the time will then come for attempting the removal of that group of symptoms, if any, dependent on the atrophy of some gland by its internal administration.

But, during the last few years, there has been a still more remarkable addition to our therapeutic knowledge, which, like the last, is due to patient, laborious work in the laboratory, to a determination to follow nature more closely in the healing art, and, if possible, to imitate her in the production of her cures. Through the introduction of serum therapeutics we enter on a new era in the treatment of the acute infective diseases, and get many steps nearer to actually curing disease than ever we have been before. The story of the discovery and elaboration of serum therapeutics will, in years to come, form one of the brightest eras in the 19th century, which will stand out all the more striking in comparison with the dark cloud of empiricism and tradition in which its earlier years were passed.

For centuries it has been recognised by the profession and the public that one attack of an acute infectious disease generally protects against a second, and for some years past it has been experimentally proved that an animal inoculated at first with sub-lethal doses of bacteria, or the toxins pro-

duced by them, will gradually, under repeated inoculations, acquire such immunity that quantities more than 1,000 times what would have been a lethal dose can be administered without producing anything more than a slight transient local disturbance. How this remarkable condition is brought about has not yet been determined with absolute certainty. Two main theories hold the field. The French school, under the leadership of Metschnikoff, explain it by the mechanical action of the leucocytes which consume, digest, and thus destroy the infecting agents. Many present will, no doubt, remember the very interesting account of this theory of phagocytosis that Dr. Bewley gave, as President of the Association, some seven years ago. The German school, on the contrary, attribute the immunity to the chemical action of certain substances in the blood serum, which, for want of a better name, have been termed antitoxins.[a] Much has been written on both sides, and the question is still an open one, but it is a very remarkable fact that the serum of an animal rendered artificially immune to diphtheria or tetanus confers, when inoculated into another animal, a degree of resistance to these bacteria or their toxins, proportionate to the number of injections made into the former animal. Furthermore, it has been conclusively demonstrated that the immunising property of the blood serum will take effect even after the animal has been infected, and materially assist in rendering the poison innocuous. These brilliant and remarkable results are due to the indefatigable zeal and energy of Behring and Kitasato in Germany, and Roux and Martin in Paris. Founded on such a scientific basis it would be extraordinary if similar benefit could not be obtained from the serum in treating human beings; but before attempting to show by statistics that it has justified the hopes entertained by its discoverers, let me briefly describe the process by which the immunised serum is obtained, merely premising that, though speaking chiefly of diphtheria, similar methods are used in preparing other kinds of serum.

The first step in the process is the preparation of the toxin.

[a] See Professor Klein's article in British Medical Journal of August, 1895.

We obtain a pure culture of diphtheria bacilli and inoculate these on the surface of a large quantity of distinctly alkaline beef bouillon contained in a Winchester quart bottle. All races of diphtheria bacilli are not equally virulent; and as our aim is to produce as powerful a toxin as we possibly can, the more virulent the bacilli are the better. Our culture flask is now placed in an incubator and kept at a temperature of 40° C. for two or three months. By that time it is found that the maximum amount of toxin has been produced. It was at one time thought that a considerable amount of air tended to increase the virulence of the toxin, but it has now been found that air is not only not a necessity but rather a disadvantage. As soon as the maximum amount of toxin has been formed, the fluid is filtered through a Pasteur-Chamberland porcelain filter, which removes all the bacilli, while the toxin passes through and is found in the filtrate. The specimen of diphtheria toxin which I am enabled, through the kindness of Dr. Bulloch, of the British Institute of Preventive Medicine, to exhibit to-night, is the most virulent he has succeeded so far in producing. The race of bacilli came in this particular case from Norway, and this toxin is so virulent that ·1c.c. will kill in 18–20 hours a guinea-pig of 400–500 grammes. Behring has a toxin ·1c.c. of which kills in eight hours, but Dr. Bulloch has not yet succeeded in attaining this standard.

Preparation of Horses.—These are selected, after careful examination, by Mr. Robertson, the Veterinary Surgeon of the Institute, who always avoids grey horses on account of the great probability of their developing sarcoma. The selected horses are put in quarantine for three weeks under close observation. Their temperature is taken morning and evening; they are tested for tuberculosis by an inoculation of tuberculin, and on two occasions for glanders by an inoculation of mallein. If absolutely sound, they are then used for the preparation of antitoxin.

Preparation of Antitoxin.—A small quantity of the toxin as above prepared, say ½c.c., is inoculated into the horse under strict antiseptic precautions. At first there is often considerable local and constitutional disturbance, but this subsides in a few days, and then a larger quantity of the toxin is

inoculated. Gradually the dose is increased, so that the horse gets 5, 10, 20c.cs. per week. This is further increased to 100, 150, and, finally, 200c.cs. of this highly toxic substance can be inoculated into the horse without producing practically any disturbance whatever. When this has been done three times in one week—*i.e.*, 600c.cs.—it has been found that the maximum amount of antitoxin has generally been produced. That this stage has been reached is determined by sampling the blood with a small cannula and determining its strength. The preparation of the horse takes six to eight weeks.

The next stage in the process is the bleeding of the animal. All the instruments and vessels being thoroughly sterilised, the hair is shaved off that part of the jugular vein which it is intended to expose, and the whole side of the neck thoroughly douched with carbolic lotion. Pressure on the proximal end of the vein makes it stand out distinctly, and an incision about an inch long is made. During this process the pain must be very trifling, as the animal remains very quiet. The cannula is now thrust into the vein, and the blood flows at once through a piece of tubing into a flask. About six or eight pints are collected before the animal shows any signs of discomfort. During the process the mucous membrane of the mouth is watched, and the respirations carefully observed. At the first indication of any dyspnœa, the cannula is at once withdrawn, and the wound closed by a few catgut sutures. Immediate union always takes place, and often the continuity of the vein is unimpaired. The horse is led back to the stable, and, apparently not in any degree disturbed, commences to feed. From personal observation I can state that the operation is practically painless. The vessels containing the blood are now placed for 24 to 48 hours in a large ice chest; clotting proceeds. The serum is decanted off, and filtered with great care through a porcelain filter. It is now distributed among several small bottles, each containing about 30c.cs. As fast as they are filled they are passed to an assistant, who drops in a fragment of burning camphor—which by its slight antiseptic action tends to prevent moulds forming if only part of the 30c.cs. should be given as a dose—and then passes the bottle to No. 3 assistant, who inserts a sterilised cork, and seals or

hands them to No. 4 for that purpose. These bottles are now placed in an incubator and kept at a temperature of 40° C. for 24 hours, and if, at the end of that period, there is the slightest trace of turbidity suggestive of possible contamination through the filling process, they are rejected; but if quite clear, they are ready for distribution. The strength of the antitoxin is determined by finding the minimum quantity which render entirely inert a lethal dose of the toxin. The immunity is often as high as 1 in 200,000—*i.e.*, $\frac{1}{200,000}$ of a c.c. of the antitoxin will neutralise 1c.c. of the toxin.

It must be borne in mind that many cases of diphtheria are examples of mixed infection, other organisms than the diphtheria bacillus—generally staphylococci or streptococci—being present. To meet this complication an attempt is being made to obtain a serum which will contain an antitoxin to the products of all these organisms. Whether these attempts will be crowned with the great success which has attended the antitoxin to the diphtheria bacillus alone, cannot yet be stated.

Now as regards the results, and first among the lower animals, let me quote a passage from Professor Klein's paper, read before the British Medical Association:—"Behring," he states, "succeeded in immunising animals to so high a degree against diphtheria, that $\frac{1}{60000}$ or even $\frac{1}{150000}$ part of a 1c.c. of the serum mixed with a fatal dose of diphtheria toxin and injected into a guinea-pig, leaves this perfectly unharmed, whereas the control guinea-pig develops a tumour and dies in 36 hours after the injection of the same toxin." "I venture to say," he continues, "that nothing can be found in the whole range of experimental pathology or pharmacology which offers clearer or more striking results than these experiments."

Now, as regards human beings—and here one must be struck by the extraordinary unanimity of opinion expressed by clinical observers in almost all parts of the world—if we look first at London, where diphtheria is very rife, we find that Washbourn, Goodall and Card report 72 cases, 14 deaths = 19·4 per cent. with serum, while, before its introduction, the mortality was 36 to 41·8 per cent.

In France, Roux found the mortality for 4 years without

serum to be 51 per cent. For 6 months, without serum, he collected 520 cases, 316 deaths = mortality of 60 per cent. without serum. For 6 months, with serum, there were 448 cases, 109 deaths = 24·3 per cent. mortality, showing a benefit from the serum of 27·21 per cent.

In Berlin, in Baginsky's Clinic, most striking demonstration as to the utility of the serum was obtained. The mortality for years past has been about 45 per cent. When he commenced to use the serum, the mortality fell to 15·6, but the supply running short, up went the mortality again to 48·4. A fresh supply of serum again reduced the mortality, but when it was exhausted the death rate again rose.

Von Ranke, of Munich, was equally enthusiastic in his description of the great benefit of the serum.

In Vienna 159 cases were treated with serum. with 40 deaths = 25 per cent., as against a former percentage of 50 prior to the serum treatment.

The great secret in the successful treatment of diphtheria with serum seems to be in its early administration. Behring claims that if antitoxin treatment is properly begun before the third day, the mortality will fall below 5 per cent. The almost universal opinion is that the antitoxin is a harmless substance; it sometimes, however, produces slight elevation of the temperature, or a diffuse erythema.

Tetanus antitoxin is produced in precisely the same way, but the results have not been at all so brilliant. In acute cases it seems to be practically useless, while many chronic cases recover in which it has been administered, but a sufficient number of cases have not yet been recorded by any observer to justify any decided conclusions as to its efficacy.

Serums have also been used in the treatment of syphilis, typhoid, typhus, pneumonia, cholera, &c., but in none has the experimental work been placed on the same firm basis as in diphtheria, and I, therefore, think that their administration to our patients is at present, at least, somewhat premature. With cancer the results are so far quite negative.

Very interesting work has, however, been done within the last few years by Professor Fraser, of Edinburgh, with snake venom, which tends to explain the immunity of snake charmers, and to support the belief that venomous serpents

are protected against the venom of their own and other species of serpents.

If there be an acquired protection it would most probably be due to absorption of venom from the alimentary canal. Venom administered by the mouth does not produce any toxic effects, and Dr. Fraser was able, by gradually increasing the dose, to give a cat on the 116th day a quantity 80 times as large as the minimum lethal dose given hypodermically, without producing an observable disturbance. This cat was able to bear a dose of $1\frac{1}{2}$ times the minimum lethal without any general symptoms following, though some local necrosis of the skin took place. Similar results were obtained with white rats, so that it would appear that venom given by the mouth does confer a certain and not inconsiderable degree of resistance against the toxic effects of subsequent lethal doses of venom.

Furthermore, Dr. Fraser has been able to prove that serpent's blood contains an antidotal substance capable of preventing death when administered either before, with, or 30 minutes after, a lethal dose of cobra venom had been administered to an animal.

He has been able, by gradually increasing the dose, to give a horse 15 times the assumed minimum lethal dose, and the blood serum has been found to have distinct antitoxic properties, hence he has named this substance antivenene, and through his kindness I am able to lay before you specimens of the two forms in which it has been prepared.

In conclusion, may I say that there seems to be much in the most modern therapeutical methods to encourage hope. If we are still

> "Children crying in the night,
> Children crying for the light,"

there are many indications that the dawn is at hand. Already the tops of the mountains surrounding the dark valley of empiricism are tinged with that colour which heralds the break of day, and we have great reason to hope, as Sir Edwin Arnold recently said, "That the day will surely come when man will not die of tuberculosis, of typhoid, of scarlet fever, in London, Paris, Vienna, Berlin," and, may I add, or even in Dublin.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

An Essay on Malaria and its Consequences. By ROBERT LINDSAY, A.M., M.B., F.R.C.S.E.; Retired Surgeon, Army Medical Department. London: H. K. Lewis. 1895.

THIS little volume is the outcome of a large personal experience of the still mysterious group of diseases with which it deals. In the course of his service in the army it had been his misfortune both to see a great deal of malarial disease, and to suffer long and seriously from it personally. And in the small practice, in a country district in England, in which he embarked on his retirement from the service, it fell to him to have still further experience—both personal and professional—of the influence of, and the means of contending against, malaria. He claims therefore that the views, which he endeavours to explain in the following pages, whether eventually they be proved and accepted generally or not, are the views, not of a tyro, but of one who may not unreasonably be deemed somewhat of an expert.

The writer brings all the force of his professional and general intellectual attainments to bear upon "carbonic acid," as the agent of evil in the production of a malarious atmosphere; and also, indeed, in the manifestation of the notoriously objectionable qualities of our own home-manufactured east winds. " . . An abnormal quantity of carbonic acid, . . will be found to be most abundant in the following situations:—Over marsh lands, where the succession of unremoved vegetable growth entails a perpetual presence of much superseded and decomposing vegetable matter; over alluvial tracts, comparatively recent or of ancient formation, which contain in their soil a large quantity of imperfectly reduced components of vegetation; in the deep interiors or near the shaded borders of old, dank, luxuriant

jungles or woodlands; in the valleys and lower levels in or around extensive chalk formations; and, in any of these, in greatest intensity, and therefore most hurtful, in the lowest levels and the most confined hollows and recesses, and in those parts where these favouring conditions have been of longest standing. But the types of localities here set forth, differing the one from the other, are identical with these, also mutually differing, in which it has been well ascertained that malaria most abides and wields its baneful power."

The one undeniable fact established by the publication of this *brochure* is that Mr. Lindsay does not like carbonic acid. There is no secret connected with his attachment to it of the bulk of the blame for all the personal ills which malaria has inflicted upon himself. Carbonic acid (*gas*, of course, must be understood) is the cause of the phenomena of malaria; and, accordingly, the prevention of malarial diseases must be effected by the prevention of the accumulation of carbonic acid gas in the atmosphere, or its absorption into the system. To illustrate this theory he dwells upon the known phenomena which attend poisoning by carbonic acid (gas)—both chronic and acute.

With regard to treatment, after noticing the statement that "on *mangrove swamps*—those hideous wastes of sea-laved, black, and greasy mud, whereon almost the only forms of life are the mangroves and a little human population—there is no malaria. . . ," we read: "I think it is likely that it is not in a state of absolute freedom, that these haloid elements are thus shed into the atmosphere, but in combination at least with hydrogen, and that they are, so to say, administered to the soil by the sea-wash in these forms of combination in which they exist in the sea, as chlorides, bromides, iodides and fluorides; which also are the forms in which they may be most conveniently administered in our therapeutics. To these salts and acids, therefore, of 'haloid' origin I gave my faith, as probable antidotes, in some part or degree, to the poison of malaria; and I had the eventual satisfaction of finding that the results of their use in the treatment of many advanced cases justified my faith."

We need only say, in conclusion, that we have found a good deal to wonder at, but nothing to admire, in the ætiology,

physiology, pathology, pharmacology and therapeutics of this small monograph. Nevertheless the symptomatology of an author who has seen so much of the disease which he undertakes to explain is worth looking into. And it is so much the greater pity that the eye of faith should be so completely dimmed as it has been in the present instance.

Injuries and Diseases of the Genital and Urinary Organs. By HENRY MORRIS, M.A., M.B. Lond., F.R.C.S.; Surgeon to, and Lecturer on Surgery at, the Middlesex Hospital; Member of the Council and of the Court of Examiners of the Royal College of Surgeons, England; Examiner in Surgery in the University of London. With ninety-seven Illustrations. Cassell & Company. 1895.

THIS volume forms a portly octavo, of xvi and 478 pages, well written, very clearly printed, fairly well illustrated, and bound with tasteful simplicity. The author informs us in his preface that it is in a way a continuation of his book on the "Surgical Diseases of the Kidney"—a second edition of which is in course of preparation at present.

The present work has been arranged on the lines adopted in the articles contributed by the author to Treves' "System of Surgery." He has, and, we think, very judiciously, used the form adopted by the systematic rather than the clinical lecturer, the latter of which "is perhaps the more attractive, and certainly is the less laborious to the author."

The text is arranged under three headings, with the respective titles of "Genital Organs," "Genito-Urinary Organs," and "Urinary Bladder." A clear, lucid style, with extremely well-chosen language, gives the reader the great advantage of being able to follow the author's line of thought and reasoning throughout. We have read few recent treatises, indeed, in which this merit is more conspicuously displayed; and no words are wasted on mere ornamentation or display of theoretical knowledge—the whole tone of the volume is eminently practical. In his choice of operative procedures the author gives clear reasons for his predilections, based upon the theoretical arguments which have appealed most

strongly to his own judgment, and the results of the personal experience which he has acquired in his own practice. In the treatment of "Tubercular Testis," "Medical treatment should be tried as long as the deposits are small and hard; but as soon as caseation has commenced operative treatment should be employed. The testicle should be treated in the same way as bones, joints, cervical glands, and as I have treated kidneys affected with softening tubercular deposits, *i.e.*—every softened area should be opened, the contents well scraped out, then the cavity well rubbed with iodoform. It is surprising how rapidly wounds in organs so treated heal. Though it is believed that such treatment leads to atrophy, yet this is a lesser evil than extension and diffusion of tubercle. When erasion has failed, when the fistulæ persist or are numerous, when there is fungus with a small wasted testis, and when the whole or greater part of the organ is invaded, castration is the only treatment." This certainly appears sound advice; still we must say on this head that we have seen a good many trials of erasion, and have been greatly disappointed in the results. In the case of an organ so much prized as is the testicle, the surgeon, of course, will hardly be satisfied that he has done his duty except he has made every possible effort to save every portion which appears to have any chance of ultimately regaining its physiological usefulness. But, in our own experience, we must confess that in the great majority of cases the final result has been disappointing, and recourse was at last had to castration. In the treatment of hydrocele of the cord, "in very young children discutient lotions, such as the chloride of ammonium, spirit or lead lotions; or counter-irritants, such as tincture or ointment of iodine, may disperse the swelling." We must take the liberty of questioning this statement.

In connection with the treatment of prostatic hypertrophy, the now rather fashionable operation of castration does not seem to have been practised by the author. "The treatment by castration is undergoing a certain amount of trial in this and other countries, the results of which will be awaited with much interest."

We do not think it necessary to give further extracts, and will conclude our notice by expressing the opinion that the

surgical practitioner will find this volume, upon the whole, one of the safest guide-books in the surgery of one of the most important departments of his practice.

Examination of Water for Sanitary and Technic Purposes. By HENRY LEFFMANN, A.M., M.D., Ph.D.; Professor of Chemistry in the Women's Medical College of Pennsylvania, in the Pennsylvania College of Dental Surgery, and in the Wagner Free Institute of Science; Pathological Chemist to the Jefferson Medical College Hospital; Chemist to Dairy and Food Commissioner of Pa. Third Edition, Revised and Enlarged, with Illustrations. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut-street. 1895.

As this small text-book has now reached its third edition, its career may be pronounced a success. The writer is evidently a thorough master of his subject, knows well how to select and arrange his material, and possesses the happy (American) faculty of expressing his ideas in language of unmistakable meaning. The "Contents" are divided as follows:—"History and Classification of Natural Waters—Analytic Operations—Interpretation of Results—Technic Applications—Addenda—Analytic Data—Index." There are twelve wood-cut illustrations. The author allows himself but small space, and wastes none of it in unprofitable discussions. These are the concluding sentences of the short section which deals with the "Action of Water on Lead":—

"The following is a summary of the more important observations on this subject:—

"Corrosive: Free acid or alkalies, oxygen, nitrates, particularly potassium and ammonium nitrates, chlorides, and sulphates.

"Non-corrosive and preventing corrosion by the above: Calcium carbonate, sodium acid carbonate, ammonium carbonate, calcium silicate, silica, and soluble phosphates.

"It is said that filtration through animal charcoal is a means of removing the greater portion of any lead suspended or dissolved in the water. Such filters must be attended to and renovated from time to time."

There is a capital section on "Biologic Examinations;" it deals well with the most appropriate "cultures" and the best "stains" for feeding and colouring of the omnipotent "microbes."

We are very pleased with this little manual, and recommend it heartily.

Materia Medica Tables: Designed for the Use of Students. By A. Herbert Butcher, L.R.C.P., L.R.C.S., and L.M.; Honorary Surgeon to Birkenhead Borough Hospital. Edinburgh: E. & S. Livingstone.

This compendium "is in no way intended to replace the standard authorities on the subject, but mainly as an assistance to the student in preparing for his examination. In these Tables will be found all the facts contained in the larger works, arranged in such a manner that they can be easily and quickly committed to memory—an important consideration when time is of value."

There is a great deal of information in these Tables, and we must say that it is arranged on a judicious and easily get-at-able plan. The only thing we will say against them is that they belong to a bad type of text-book—an unhealthy form of mental pabulum of which far too much is supplied to the unhappy student in this age of over-examination.

The Student's Pocket Prescriber. By H. Aubrey Husband, M.B., C.M., B.Sc., F.R.C.S.E., M.R.C.S., L.S.A.; for six years one of the Medical Officers of the Royal Dispensary, Edinburgh; Author of the "Student's Handbook of the Practice of Medicine," "Student's Handbook of Forensic Medicine and Public Health," "The Urine in Health and in Disease," &c. Third edition. Edinburgh: E. & S. Livingstone. 1895.

The fact that the third edition of this pigmy pocket-book is now on the reviewer's table is, so far forth, an indication that it has been found useful to a certain section of book-buyers. In the preface to the first issue the author told his readers that: "The difficulty experienced by pupils at dispensaries in prescribing for their outdoor patients, has

induced me to prepare the following collection of prescriptions." There are prescriptions in the present edition "containing combinations of the new drugs which have been added to the materia medica of the physician." There are certainly items, large in number, and mostly unobjectionable in practice, and they are preceded by an instructive little introduction, and the author has shown marked consideration for the future expansion of his reader's attainments by having the whole booklet duly interleaved. For all this and these, we heartily wish that this Tom-Thumb manual had never seen the light. It will never aid in the formation of an industrious student or a reliable practitioner.

Functional and Organic Diseases of the Stomach. By SIDNEY MARTIN, M.D., F.R.S., &c. Edinburgh and London: Young J. Pentland. 1895. 4to. Pp. 498.

No greater tribute can be paid by a reviewer to a book than holding it over until works of less importance have been noticed. We have acted in this manner towards the volume before us, and can sincerely say that we have derived genuine satisfaction in perusing its pages.

As we might surmise from the distinguished name of the author, a clear, concise, and rational method has been adopted in dealing with the subject in hand. Though no claim to originality is put forward throughout the work, yet much information will be found therein new to those who have not made the subject of diseases of the stomach a distinct specialty.

Chapter I. deals exhaustively with the anatomy and physiology of the organ; nothing of importance at present known is omitted, and the chapter is not without its surprises. For instance, it will probably strike some as strange to hear that absorption of water does not take place in the stomach. The sources from which lactic acid is derived, and its effect on the digestive process is also very interesting reading.

Chapter II. discusses the digestibility of various articles of food, and the effect on digestion of food accessories (condiments, alcohol, tea, &c.).

Dr. Martin is a firm believer in the necessity of palatable food as a digestive aid. Toasted bread, and well-cooked vegetables, are also strongly recommended. The prevalent custom of picking between meals, and taking these at too short intervals, is shown to be highly injurious—the author being no believer in the maxim, "little and often."

The observations bearing on the propriety of using alcohol and tea at meals are instructive, though differing materially from the views so long insisted on by total abstainers. Stated shortly, we find that, with the exception of alcohol (whisky, brandy, &c.), all beverages—tea, beer, wine, &c.—delay digestion.

Chapters III. and IV. deal with the pathology of indigestion, and the different forms of bacterial fermentation occurring in the stomach are noticed. These are divided under three heads, viz.:—1. Acid; 2. Alcoholic; 3. Putrefactive fermentations, respectively. As many as 14 micro-organisms capable of forming lactic acid from the carbohydrates are at present known, so that it is matter of no surprise to find this substance so constantly present in the stomach contents. The methods of examination of the functions of the stomach in disease are discussed in Chapter V. under the following heads:—

1. The presence of undigested food.
2. The presence of micro-organisms.
3. The presence of mucus, blood, and pus.
4. The total degree of acidity.
5. The character of the free acids present—hydrochloric, lactic, butyric, &c.
6. The presence of the products of digestion—syntonin, albumoses, peptone.
7. The presence of pepsine and the curdling ferments.

We shall not attempt a synopsis of the next five chapters, which can be studied with much greater profit in the work itself.

Chapters X., XI., and XII. are devoted to treatment of diseases of the stomach. Dr. Martin classifies the conditions to be attended to thus:—1. Alterations in the secretion of the gastric juice; 2. Alterations in the motor activity of the stomach. With these may be associated—

a. Dilatation of the organ, whether simple or obstructive.

b. Bacterial fermentation of food.

c. Congestion of the organ, whether mechanical or active.

d. A nervous irritability set up by various local and general conditions, such as hyperacidity, irritant food, &c.

e. Lastly, organic diseases of the organ, ulcer, or carcinoma.

In the treatment of stomach affections therapeutic measures are adopted :—

1. To stimulate the stomach functions, secretion and motor activity.

2. To act as sedatives to an increased functional activity, *e.g.*, an increased secretion of HCl.; an increased motor activity.

3. To act as sedatives to nervous and motor irritability.

4. In some cases to supply a deficiency in secretion, hydrochloric acid, and pepsin.

5. To prevent and counteract bacterial fermentation of the food.

6. To treat prominent symptoms such as flatulence, acidity, and dilatation of the organ.

It will, by this list, be seen that the author does not shirk the important question of treatment; this he discusses under three heads—

1. Medicinal.

2. Dietetic.

3. Washing out the stomach, massage, hydro-therapeutics, &c.

There is nothing which can be said to be absolutely new in these chapters, nor can we reproduce any passages from them without recapitulating facts that some one of our readers will be familiar with. Nevertheless we feel sure that there are few incapable of deriving much valuable information from their perusal as a whole.

Hæmorrhage from the stomach, dilatation, ulceration, and cancer receive full notice in the succeeding chapters, and furnish us with most of the important information relative to these subjects.

The publishers have, as usual, carried out their part of

the work in excellent style. The fifty-seven illustrations are most of them distinctly good, and were it not for the very meagre and imperfect index we would have had nothing to say but what is commendatory of this truly admirable book.

The Practitioner: A Journal of Practical Medicine. Edited by MALCOLM MORRIS. Old Series, Vol. LV. New Series, Vol. II. July to December, 1895. London, Paris, and Melbourne: Cassell & Co., Ltd. 1895. 8vo. Pp. 642.

MR. MALCOLM MORRIS has inspired *The Practitioner* with new life, and may well be congratulated on the achievement. The second volume, published under his editorial ferule, has issued from the press, neatly but substantially bound, at the wonderfully reasonable cost of seven shillings and sixpence. *The Practitioner* is, therefore, not only one of the best, but also one of the cheapest medical periodicals of the day. It is well described on the title-page as "a Journal of Practical Medicine." It is well printed in clear type on excellent paper, and its contents are varied and instructive.

The New Sydenham Society's Lexicon of Medicine and the Allied Sciences. (Based on Mayne's Lexicon). Twenty-second Part, Pin–Puke. London: The New Sydenham Society. 1895.

AFTER a long interval another instalment of this Lexicon has made its appearance. With much regret we learn that the cause of the delay was in part the illness of the Editors. The work is now, however, again in active progress.

The present fasciculus carries the Lexicon towards the close of the letter P, the last entries being "Puke" and "Puke-weed." The pure Anglo-Saxon of the latter trivial name for *Lobelia inflata*, and the classical use of the former by William Shakespeare in *As you like it*—"At first the infant, mewling and *puking* in the nurse's arms"—should have stayed the ruthless pen of the Editors from writing "Puke, vulgar term for *vomit*."

It is a little disheartening to Irish writers to find the term "Pythogenic Pneumonia," now everywhere accepted as a synonym for "Sewer-gas Pneumonia," attributed to Gould, and incompletely defined in these words: "Term for a contagious pneumonia arising under miasmatic influences." The expression "Pythogenic Pneumonia" was first used by Drs. T. W. Grimshaw and J. W. Moore, in 1875, in a paper, written by them conjointly, which was published in the number of this Journal for May of that year (Vol. LIX., page 399). They applied the term to cases of inflammation of the lungs occurring often in an epidemic form in the presence of overcrowding, defective ventilation and fæcal miasm—the disease being apparently contagious.

The Lexicon is evidently nearing its completion, and will, when finished, be of the greatest use, not only to the medical profession, but also to the public at large when at a loss for the meaning of some technical term or for a short and apt definition of an obscure word or phrase.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections. Edited and annotated by J. J. PRINGLE, M.D., F.R.C.P. Part III. London: The Rebman Publishing Company. 1896.

IN quick succession to the second fasciculus, Part III. of this fine work has now been brought out. It reached us safely stowed away in a substantial and exceedingly neat portfolio, which is intended "to act as temporary cover" of the Pictorial Atlas, but which will hold many parts yet to be published without becoming much the worse for the wear.

The third fasciculus includes four highly-finished photo-lithochromes from models in the museum of the Saint Louis Hospital, Paris, with the accompanying descriptive letter-press and annotations by the Editor. The subjects illustrated are, in sequence—four drawings of models by Baretta of tertiary syphilitic ulceration of the tongue; a drawing of a model by Baretta of dermatitis herpetiformis in concentric circles, in cockade-like form; syphilitic gummata of the thigh, from a model by Baretta; and a drawing of disseminated epithelioma of the face, also after a model by Baretta. This

last-named disease, "sebaceous in type at the outset," is the "partial acne sebacea" of Cazenave, "senile acne sebacea concreta," or "epitheliomatous acne." The model was made during life by Baretta, from the face of an agricultural labourer, aged 70, who was admitted into the Cazenave ward of the St. Louis Hospital on November 15, 1886, under the care of M. Ernest Besnier.

We have already almost exhausted our vocabulary of adjectives in praise of this Atlas of Skin Diseases. Suffice it to say that this third part will rival the reputation of its predecessors, and is another pledge of good things yet to come.

Diet in Sickness and in Health. By Mrs. Ernest Hart. London: The Scientific Press. 1895.

The study of dietetics is of such paramount importance that one is surprised to find the small amount of attention which it receives among the rank and file of the medical profession. Here and there a consultant, and occasionally a less highly experienced brother, are found who pin their faith to a carefully drawn up dietary which must be adopted, while they relegate to a secondary position the administration of drugs in the successful treatment of disease. These are probably the wisest of our profession, although often the finger of scientific scorn may be pointed at them.

The principles of all dieting should be based on a scientific footing, and it were well for the medical profession, or, rather we should say for the patients who are treated by them, if a more extensive knowledge of foods and cookery were added to their medical education.

The author of the volume under consideration is a lady who adds to an extensive knowledge of medicine, the more practical experiences that are gained in the kitchen, and although her physiological facts can scarcely be relied on, still we regard as a distinct addition to our literature on dietetics the common sense principles which characterise the chapters on dietary in Mrs. Ernest Hart's interesting work. This is a book which may be read with advantage by the lay

public, but it is also one in which medical men will find useful information to guide them in their daily practice.

In the chapters which deal with stimulants and restoratives there is much that is profitable, although, at the same time, one might readily take exception to the expression of opinions which are quite unnecessary, and also regret that the marvellous attributes of the coca leaves have been depicted in such glowing terms.

We have nothing but praise for the infinite care with which the daily menus have been prepared, and in many cases the recipes given, for the dishes to be used by diabetics. This, and the chapter dealing with the kinds of food to be taken and avoided by those who suffer from gout, are the best portions of the book.

On the whole, we welcome with pleasure Mrs. Hart's little work, and readily suggest that it should find a place among the books of daily reference on the desk of every medical practitioner.

Food and its Functions. By JAMES KNIGHT, M.A., B.Sc., F.C.S., F.G.S.; Lecturer in Physiology and Hygiene, High School of Glasgow. London: Blackie & Son. 1895. 8vo.

THIS little volume "is an expansion of the course of lectures on dietetics which the author has been privileged to deliver to the students in training at the Glasgow Schools of Cookery."

The reader is carried by easy stages from details of the elements of which our food consists, and the combustion which takes place in the body, to the classification of foods in general, and the changes which they undergo during digestion.

The elementary physiology, which is a necessary part of such a course of lectures, is plain but exhaustive, and would require close study from beginners.

The articles of our daily food are analysed in detail, their digestibility is compared, the methods of cooking best adapted to each is explained, and their nutritive values are made known to us.

Our beverages are very fully dealt with, and in the face of all that has been written here and elsewhere on the superiority of China over Indian teas, it is a matter of surprise that the medical profession has not made a stronger stand against the increasing use of the latter.

There is only one short chapter devoted to "Food in Sickness," but even in this, some valuable hints are given, while to those who are unacquainted with the various methods of cooking the final chapter will be read with profit.

The volume is one which should take its place as a handbook for nurses as well as for students of cookery, for it is correct, concise, and full of information.

The Medical Annual and Practitioner's Index: A Work of Reference for Medical Practitioners. Fourteenth Year. Bristol: John Wright & Co. 1896. 8vo. Pp. 851.

THE plan of this, the fourteenth issue of a well-known and rightly-esteemed annual publication, is the same as that of its predecessors. Its pages are full of interesting matter, and the principal articles are beautifully illustrated with highly-finished coloured plates and woodcuts in the text.

In the "Dictionary of New Remedies" we have been much struck by an account of the "Mescal Button" (*Anhalonium Lewinii*), an intoxicant which produces delightful reverie, with pleasurable illusions of colour and form, and of Uranium Nitrate as a remedy in diabetes mellitus and in other forms of glycosuria. Notwithstanding the encomiums bestowed upon this salt by Dr. Samuel West, of St. Bartholomew's Hospital, we are not oversanguine about its curative or even its palliative power in well-established saccharine diabetes. One case, at all events, has come under our observation in which the treatment with uranium nitrate signally failed, causing extreme gastric irritation. "Remedial Cycling," "Angio-Neurosis," "The Malarial Parasite," "Toothache and Neuralgia," and "Life Assurance" are among the titles of a series of attractive special articles in Part II. of the Annual. The third part is devoted, as usual, to new treatment, and

includes an alphabetical dictionary of medicine and surgery, which occupies nearly 500 pages of the volume. In an "up-to-date" appendix, we find an account of Röntgen's method of "shadow photography" (what a strange name!), or, more correctly, "electrography," by Mr. E. Hurry Fenwick, F.R.C.S., with additions by Mr. J. W. Gifford, and notes of a case of excision of the wrist, as seen by the new rays, by Mr. J. Lynn Thomas, F.R.C.S.

Part IV.—miscellaneous—opens with a report on Sanitary Science by Dr. Joseph Priestley, Medical Officer of Health for Lambeth, London. A review of new inventions and pharmaceutical and dietetic novelties follows, and the work closes with the customary Directory.

There are not many errors or misprints, but what is the "Royal Society of Medicine in Ireland" mentioned on page 115? We could understand the Royal Academy of Medicine in Ireland being so described in a French book. It is a pity that the various plates bear no descriptive designations upon them.

The Medical Annual is as cheap as it is useful. It costs only seven-and-sixpence net. We have much pleasure in heartily recommending it as a comprehensive retrospect and storehouse of clinical and therapeutic information.

THIRD INTERNATIONAL CONGRESS OF DERMATOLOGY.

THE Third International Congress of Dermatology will be held in London, this year, from August 4th to 8th inclusive. The meetings will take place in the Examination Hall of the Royal College of Physicians and Surgeons, on the Victoria Embankment. Separate sections will be established for Dermatology and Syphilis, the meetings of these being held simultaneously. The scientific portion of the programme is practically complete, and the large number of British as well as Foreign Physicians who have testified their intention of being present ensures the success of the Congress, of which Mr. Jonathan Hutchinson is President. The fee for Membership, which entitles to the volume of Transactions to be issued, is £1, payable to the Hon. Treasurer, Mr. Malcolm Morris, 8 Harley-street, London, W. The Secretary-General, to whom all communications may be addressed, is Dr. J. J. Pringle, 23 Lower Seymour-street, London, W.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

CLINICAL RECORDS.

A Case of Otitis Media and its Sequelæ.[a] Reported by WILLIAM McCANN, Student of Medicine.

I WISH to bring forward for your consideration a sequence of events, at once instructive and remarkable—instructive in so much that the case differed in some respects from ordinary ones of the sort, and remarkable on account of the severity of the symptoms presented, and for other reasons which I shall touch upon later.

It is not my intention to weary you with a long history, or to discuss the ætiology of the chronic purulent catarrh from which the patient suffered for two years. I wish only to describe the case from the moment it came under my own observation, with, in addition, the briefest reference to its history. The patient, D. C., aged nineteen years, suffered for two years previously from an otitis media on the left side. As well as I could make out, there was a constant discharge on that side, with impairment of the sense of hearing; his right ear was intact, and he was well able to carry on his usual employment, that of cardriver. I do not know if he received any treatment previous to his coming under my notice, nor can I account in any way for the sudden onset of the serious symptoms, which caused him to seek refuge in St. Vincent's Hospital.

On admission, on January 10th, 1896, he looked very ill, pallid and worn, with a tendency to coma. He complained of headache localised in the left temporal region, and of tenderness over the mastoid, which extended down the neck for a little distance. His temperature was high—103°—and his pulse frequent and bounding; he had occasional rigors, becoming gradually more pronounced; some sweating, especially about the head, and he suffered from

[a] Read before the Medical and Scientific Society of the Catholic University School of Medicine, February, 1896.

severe thirst; there was no vomiting or diarrhœa. On examination it was found that there was a slight, foul-smelling discharge from the ear; the membrana tympani was of a yellowish colour and bulged outwards, the central depression, corresponding to the attachment of the handle of the malleus, was obliterated, and the membrane was perforated at its upper and posterior part. Œdema was present over the mastoid process, and tenderness along the course of the jugular vein. His head was shaved, leeches were applied behind the ear, followed by hot fomentations, which relieved him somewhat; towards evening, however, his condition grew grave again, and it became necessary to take active means to evacuate the pus, which, we were satisfied, was present somewhere.

The mastoid cells were evidently the seat of the trouble. The same evening they were opened, and the wall of the lateral sinus laid bare, with the usual aseptic precautions. The correctness of the diagnosis was at once apparent, for the cells were found to contain pus, thick, and very offensive. The lateral sinus appeared quite normal, and there was no sign of thrombosis. The cells were well scraped out and irrigated. A communication was established between the middle ear and the external wound, to allow of free irrigation and drainage; the wound was well plugged with iodoform gauze, the usual dressings were applied, and the patient was put comfortably to bed.

Considering the shock necessarily resulting from such an operation, the patient had a good night; the pain was to a great extent relieved, and there was no return of the rigors. Next morning, although his temperature was still high—104°—he was somewhat improved, and towards evening the improvement became more marked; he was quite rational, and did not complain of headache or pain anywhere. The wound was irrigated, and dressed twice daily, on account of the oozing which saturated the dressings; and until the following Wednesday, the 14th, his condition remained practically unchanged.

On the morning of that day, however, he got a sudden change for the worse, his temperature ran up to 105°; his pulse, which had slowed down somewhat, became again frequent, and his respirations were hurried and difficult. He complained of acute frontal headache, and the rigors returned with increased severity. After consultation it was decided to operate again, and this time the skull was trephined through the squamous portion of the temporal bone—after the method of Ballance—a short inch above the external auditory meatus, so as to get at the roof of the tympanum from above. On passing a probe between the dura mater and the bone,

a good deal of serum, apparently becoming purulent, bubbled up, with each pulsation of the brain, through the opening made. As the presence of this fluid might possibly account for the symptoms, and as no pus could be found elsewhere, the wound was washed out with warm boric solution, dressed, and the patient taken back to the ward. There was a decided improvement after this second operation. On the following day his temperature fell to the normal, all the cerebral symptoms disappeared, and he became quite calm and collected. The wounds continued to discharge a good deal of serum, and were dressed twice daily. For four days he was comparatively well, his temperature never went up, he said he was quite well himself, and, in fact, wanted to get up and have something to eat.

Unfortunately this satisfactory state of affairs was not destined to last long, for on the evening of the 20th, four days after the second operation, he developed symptoms of general pyæmia, accompanied by the phenomenal temperature of 107·8°, quick pulse, rigors, sweating, diarrhœa, and delirium. On examining the lungs, localised crepitation was found at various points, and cough was present with characteristic rusty sputum. It was quite evident that a septic pneumonia had set in. I need hardly say that, under the circumstances, very little could be done for the patient; he gradually sank into a typhoid state, and died on the seventh day after the onset of the pneumonia.

On *post-mortem* examination, practically nothing was found except what we were already aware of—that is, purulent inflammation of the mastoid cells, with extension of the inflammation through the roof of the tympanum, causing what may fairly be described as an extra-dural abscess, thrombosis of the lateral sinus, and pyæmic abscesses of the lungs. The temporal bone, which I exhibit, shows the trephine marks and the following evidences of the disease:—The tympanum has been extensively laid open, and its walls are coated with purulent *debris*. On the upper surface of the petrous there is a circular area coated with pus, where the peculiar appearance of the bone indicates commencing necrosis; the corresponding part of the dura mater is dirty yellow and thickly coated with exudation. This was the seat of the extra-dural abscess. The outer portion of the superior petrosal and the whole of the lateral sinus were occupied by a solid thrombus which was on the point of undergoing suppurative breakdown.

There are, I think, a few points in the case which call for special remark. Although the course of the disease may have been perfectly normal, yet the symptoms were unusually severe.

That the extent of the inflammation was not very great, you can see by the specimen; consequently, to account for this severity is difficult, if it be not that the streptococci concerned were of an extremely virulent type. As a result of the otitis, the mastoid cells became inflamed, giving rise to the symptoms first described, which symptoms were relieved by the first operation. Unfortunately for the patient, mischief was already brewing elsewhere, and appeared, as I have shown, as an extra-dural abscess. Extra-dural abscess, in connection with disease of the middle ear, is not of infrequent occurrence, and its usual situation is, according to Barker, either at the petro-squamous suture—as in the case before you—or in the region of the lateral sulcus. Although necrosis of the bone usually exists when there is extra-dural suppuration, it is interesting to note that there was but little in this case, and I am at a loss to account for the fact, if it be not due to timely surgical interference. Mastoid abscess is the most frequent complication met with in otitis media, owing both to the fact that the mastoid cells are in direct communication with the middle ear, and also, as Macewen points out, because they are on a lower level than the floor of the tympanum. I am inclined to think that the septic phlebitis, which resulted in thrombosis of the lateral sinus and neighbouring veins, commenced rather in the superior petrosal sinus, from direct extension, than in the small veins leading from the mastoid. My reasons for this conclusion are that, so far as we know, thrombosis did not occur until after the mastoid cells were laid open—for at that time the sinus was seen to be quite normal—and also from the fact that there was no necrosis present. That death was due solely to the septic pneumonia, both the *ante-mortem* symptoms and the *post-mortem* appearances leave no doubt. It was indeed a mystery how the patient lived so long with so extensively diseased a respiratory apparatus.

SEATS FOR SHOP-ATTENDANTS.

EVERY person, firm, or corporation employing females in any manufacturing, mechanical or mercantile establishment in New Hampshire, it has been enacted, shall provide suitable seats for the use of the females so employed, and shall permit the use of such seats by them when they are necessarily engaged in the active duties for which they are employed. A fine of not less than 10 dols. nor more than 30 dols. for each offence is the penalty prescribed for a violation of this law.—*Jour. Am. Med. Assoc.*

REPORT OF A COUNTRY DISPENSARY.

By Langford Symes, Kiltegan.

(*Continued from page 267.*)

Fevers.—Excluding the epidemic of influenza, only 12 cases of a specific febrile nature presented themselves. That epidemic was most prevalent from the 2nd of March to May 5th, and reached its height in the first week of April.

Five of the seven cases of whooping-cough occurred in members of the same family, and the others were isolated instances having no communication with the former. The typhus cases were likewise isolated, and occurred in October. They had no communication with each other apparently, nor any discoverable relation to the subsequent epidemic of typhus which broke out in the adjoining Union. They both recovered from mild attacks. One of the enteric fever cases was removed to hospital, and subsequently died of phthisis. Fevers are rare in this district.

Constitutional Diseases.—There is no question but that rheumatic ailments are frequent in this part of Ireland. The natural configuration of the country may induce this diathesis. A connection may be traced possibly between the cardiac affections and those of the rheumatic type. Excluding the rheumatisms, there are only 14 cases classed as "constitutional," and this is in accordance with the facts known to the residents that this locality is regarded as one of a salubrious type. The case entered as "Idiopathic Dropsy of Face" was a peculiar one, and there could no cause be assigned for the œdema. It was in the person of a boy of nine years of age, who presented himself on March 16th with dropsy of his face. His heart was sound, there was no albumen or other abnormality discoverable in the urine, and all his organs appeared quite healthy. There appeared to be no direct venous obstruction, and no other portion of his body was affected by it. He was not unusually anæmic. He was treated with small doses of iron, and has not come under observation since.

Respiratory.—Phthisis and acute pneumonia are very rare diseases, while bronchial affections predominate. Only 3 cases of phthisis were noted during the year. One of these came from Dublin, to remain at home, where he died, and the two remaining contracted it in this district; of these one has died and the other is at present under treatment. It is possible that in this latter case the lung may become cirrhotic. In this vicinity pulmonary consumption is one of the rarest of all diseases, and the climate, particularly from April to November, is one that is especially favourable in arresting

retrograde pulmonary mischief. In this regard it is particularly noticeable that very marked benefit results from a change from any seaside locality into this part of Ireland, whereas a like improvement frequently takes place if patients, having become convalescent here, are transferred for a time to the sea.

The case of "nervous respiration in the left lung" was that of a young man of 22, who came under observation in June. He complained of pain in the left side and palpitation, and thought it resulted from some previous strain. He was accustomed to take porter, tea, and tobacco in some quantity. The cardiac action was very much excited, and the entire left lung exhibited very marked *respiration entrecoupée*. This type of breathing was exclusively confined to this side of the chest, while in no other particular was there anything abnormal with it or the opposite lung.

The case described as "reflex cough" was one of a strikingly harassing and clanging nature. There was nothing pathological to be found on examination of the lungs; but the patient, an elderly woman, had a goître, and the distressing cough was apparently produced by the nervous connections of the tumour or the tension on the larynx from its dependent position.

Urinary.—These appear marvellously few, considering the frequent occurrence of kidney affections which may be observed amongst people in a higher social grade than those on which this Report is based. Numerous cases, classed as "high arterial tension" and "lithæmia," present features of what was termed by our late lamented President of the Royal College of Physicians of London *renal inadequacy*. These, however, are not tabulated as distinct diseases of the kidney.

Circulatory.—Two circumstances may combine to produce in this locality diseases and disorders of the heart. First is the prevalence of rheumatism, and secondly, the natural configuration of the district, which is very abruptly hilly. It is not impossible that undue strain is thus frequently thrown upon the heart in cases of persons living in high mountainous or very undulating districts.

Digestive.—Nothing peculiar strikes one in reviewing this table beyond the preponderance of dental caries. It is notoriously prevalent. No doubt an association of causes tend towards the final result in the production of this growing disorder, but they appear to be still undifferentiated.

Review of the Several Months of the Year and the relative Amount of Illness therein.

January.—36 cases recorded. The prevailing type of disease was that affecting the respiratory system, more particularly

bronchial and catarrhal affections; heart and rheumatic affections ranking next.

February.—43 cases. Prevailing affections were bronchial and catarrhal; heart affections being next, while 5 of the whooping-cough cases occurred in this month.

March.—47 cases. Specially characterised by influenza, of which 19 cases were noted. This epidemic increased during the last half of the month, and became very prevalent. Snow was unprecedented in depth, being from 6 to 15 feet on the mountain roads, remaining frozen for many weeks. Several houses were buried; in one case the inhabitants escaped by the chimney, and in another a dead body was said to have lain unburied for nine days. In accordance with Sydenham's law, the prolonged cold, being succeeded by warmth and changeable weather, produced universal illness. Three cases of pneumonia were recorded. The public health was excellent during the severe cold.

April.—39 cases. Influenza increased rapidly and became universal; 22 cases were noted.

May.—23 cases. No remarkable distribution of disease; a very healthy month.

June.—25 cases. Two of the 3 cases of phthisis noted during the entire year came under observation this month.

July.—31 cases. Affections of the heart predominating; rheumatism also specially noted; 1 case of enteric or "gastric fever of childhood" observed.

August.—19 cases. The healthiest month in the year.

September.—25 cases. Specially characterised by rheumatic affections.

October.—25 cases. Chiefly notable as containing the only cases (4) of adults affected with enteric and typhus fever. The cases were removed to the Fever Hospital, and the houses limewashed and disinfected.

November.—32 cases. Nothing remarkable in the illness of the month beyond the re-appearance of influenza—3 cases.

December.—45 cases. Lumbago became very common, more so than any other affection. There were 6 cases noted. Three cases each of mitral regurgitation and high arterial tension were also recorded.

Taking the several months of the year and the relative amount of illness occurring in each, amongst those receiving medical relief from the dispensary we find them falling into the following order, commencing with the most unhealthy month, or that most fruitful in producing illness:—

1. March - - - 47 cases.
2. December - - - 45 ,,
3. February - - - 43 ,,
4. April - - - 39 ,,
5. January - - - 36 ,,
6. November - - - 32 ,,
7. July - - - 31 ,,
8. June - - - 25 ,,
9. September - - - 25 ,,
10. October - - - 25 ,,
11. May - - - 23 ,,
12. August - - - 19 ,,

Mortality and Death-rate.—The mortality amongst these cases attended during the year was very low. It is seen at a glance from the annexed table:—

Total cases attended - 391
Deaths - - - 11

Of these 11 cases 7 were aged 60 or upwards, and 1 was under 1 year of age. They may be tabulated as follows, the date on which each death occurred being given as of great importance in determining the various healthy and unhealthy periods of the year:—

Date	Cause of Death	Age
January 5.	Bronchitis.	70 years.
,, 31.	Cardiac dropsy.	62 ,,
March 11.	Influenza and bronchitis.	76 ,,
,, 13.	Influenza.	11 months.
,, 16.	Mitral heart disease.	63 years.
,, 26.	Paraplegia (paralysis).	75 ,,
April	Malignant tumour of mesentery	38 ,,
July 10.	Phthisis.	32 ,,
August 28.	Malignant disease of liver.	58 ,,
November 27.	Pneumonia.	57 ,,
,, 15.	Cardiac dropsy.	85 ,,

Thus we see that the month of March is alike fruitful in illness and mortality, causing in this district 4 of the total 11 deaths of

the year. The total number of deaths of all classes of the community registered in the district during the year amounted to 65. Out of these 65 deaths 4 were "unusual" ones, in which cases inquests were held; of the remaining 61 cases of death only 21 were certified or attended by any medical practitioner. Thus we find that—irrespective of the inquest cases—40 persons died within the district without applying for any medical advice or relief whatever, and, of course, without any medical certificate being obtained as to the true cause of death. This lamentable state of things strikes one as being very peculiar, and is more easily observed than understood. Taking for granted that a similar case holds throughout Ireland, there must die annually in this country several hundred people unrelieved by medical science, though it is abundantly within the reach of every inhabitant, and of these people no correct and trustworthy cause of death can be assigned. Calculated that the population of the district is (as in 1891) 4,191, the total death-rate from all causes amongst all classes of the community is therefore 15·5 per 1,000, while the death-rate amongst those attending the dispensary is 2·8 per cent. of those affected, or 2·6 per 1,000 of the entire population.

The cases in which inquests were held were the following:—

—	Date	Particulars	Verdict
1.	July 11.	A shoemaker, found dead in a field.	"Death from heart disease, aggravated by epileptic fits."
2.	Oct. 21.	A pensioner, died suddenly after walking up a hill to his house.	"Disease of the heart."
3.	Nov. 1.	A schoolmistress, found dead in her bed.	"Natural causes."
4.	,, 18.	A farmer, died suddenly on the road.	"Disease of the heart."

There were three deaths of an "accidental" or "unusual" class in which no inquests were held, viz.:—

—	Date	Particulars
1.	Jan. 24.	Girl of three years burnt in fire; death in eighteen hours.
2.	Mar. 4.	Farmer, killed by fall from tree; death in three hours.
3.	,, 31.	Labourer, choked suddenly by a lump in his throat.

Touching the subject of inquests, it may sometimes become a difficult question to decide whether, in a given case of death, an inquest should be held or not, or whether it should be reported to the Coroner, in whom of course the duty of decision is vested. A reference to the following classification of deaths, in cases of doubt, will very materially help to clear up this question, and throw light on points, which, without this aid, appear uncertain and doubtful.

All deaths may be classified, for the purposes of enquiry, into—

I. *Usual.*—Natural or expected.
II. *Unusual.*—Sudden: uncommon: unexpected: unnatural: peculiar: or deaths in prison, &c.
III. *Accidental.*
IV. *Suspicious.*
V. *Violent.*

In the last four cases inquests are usually held.

Deaths can also be classed into—I. Certified; and II. Uncertified; but a medical certificate, although correctly stating the cause of death, does not prevent an inquest being held. This may appear unnecessary to mention, but so frequently are professional men asked to give certificates as to the causes of death, in the hope that an inquest may be averted, that a wider knowledge of the facts is desirable. A physician may certify correctly as to the cause of death in cases which he has examined during life, and yet, under "unusual," "accidental," or "suspicious" circumstances, no certificate, however true, should arrest an enquiry.

The total number of births registered in the district during the year was 72, therefore, calculated with the population, we find a birth-rate of 17·1 per 1,000, and a death-rate of 15·5 per 1,000. The emigration from the district and the immigration into it have, however, not been estimated, so these rates, although quite correct, do not of themselves convey proportionate increase of the population.

SOME REMARKS UPON THE PRACTICE OF MEDICINE IN THE COUNTRY.

THERE are not wanting many grounds for the belief that a popular impression exists, and even in the minds of members of our own profession, that a physician taking up a "country practice" is entering upon a field of work where he can with greater ease and comfort follow his calling, and where patients are less seriously ill, or somewhat indifferent to the exact refinements of our science and art, or that even they do not require that amount of care and skill

which is demanded of city professional men or specialists in particular departments of medicine!

Let him who thinks so, think so no more. Let him either discard it from his mind, or give up the thought of ever, with credit to himself or his profession, filling such a position, fraught as it is with such enormous responsibilities.

I believe no path of professional life is of more difficult pursuit, none will require so high a standard or ideal of medicine, both as a science and an art, and in none is a more thorough, deep, and comprehensive knowledge of one's work essential. To him who may think that in the country people do not become very dangerously or seriously ill, I would impress the fact that the very reverse is the case. Living under usually normal conditions of public health, without any special overcrowding, offensive trades, or other deleterious influences, which so frequently affect the system in cities, residents in country districts when afflicted by illness exhibit almost invariably the most intense form of structural disease. It is, as a rule, no passing influence which has affected them—no transitory ailment which lays them aside—but, in almost every instance that the writer has observed, definite and pathological structural lesions are to be found if a strict investigation is made. People living under such favourable conditions as regards air space, fresh air, pure water, and free from the evil influences necessarily attaching to life in a crowded city, are scarcely ever attacked by disease unless that disease is of the greatest intensity and virulence, or unless their system is so lowered and debilitated from some certain causes as to render them prone to the onset of illness. EVERY CASE, therefore, presented to the physician in a country locality will, I believe, be found to be one of more or less severity. Every case will demand of him the greatest care and skill that is in his power to bestow. Every case will, I believe, be caused by some definite pathological change; and every case, having already all the advantages of salubrious surroundings, with good air, water, and ventilation, with, as a rule, absence of the evils of defective sanitation, will be more or less a typical instance of this structural decay, and will be COMPLETELY dependent upon the science and art of the physician for its removal or alleviation. Nature has already been bountiful in her gifts of healthy surroundings, and the physical defect in all its structural revelations remains at the physician's door, a testimony to the success or failure of the science and art of his profession. He is alone; he is "single-handed;" he is the representative of his entire profession; he is the specialist in each department of medicine to which his case relates; he is cut

off by his geographical position from immediate professional intercourse, except in cases of dire necessity; he has the most absolute and not only undivided, but *indivisible* responsibility. To him, therefore, is assigned, the well-nigh impossible duty of attaining that pitch of excellence consisting in a perfect knowledge of every branch of his profession, in all the depths of its specialism. Such an attainment is unsought, and unknown in metropolitan districts, where its accomplishment were even tenfold easier, but such attainment is not only desirable, but essentially imperative upon him whose *rôle* is that of a country physician.

Physician alone he cannot be. Surgery, in all the difficulties of its great emergencies, must he ever be familiar with and prepared for.

It has often occurred—and to the author—that the urgency of sudden operative interference in a tracheotomy, a strangulated hernia, a severed artery, or prostatic retention, has been thrust upon the physician in the midst of work more strictly "medical," and in a moment, with every disadvantage, the case in all its bearings must be met by the operative surgeon, versed in all the skilled *technique* of the surgical art, and this frequently under the scantiest conditions of help.

These few words are intended to specially apply to those who entertain the practice of their profession in the country, and to specially point out that the training and education necessary to fit one for the successful practice of his art and science under similar conditions should be one of infinitely greater depth, of far more scope, and of undiminished earnestness, as compared with the pursuit of the healing art in other walks of life.

Much might be said of the advantages of such a position in a professional point of view did space permit. Surrounded by countless examples of the various courses of disease in plants and animals, to which the human organism forms no exception, and seeing the wonderful processes of nature in her recuperative and compensatory powers, one is, like Henry Gawen Sutton, more and more impressed with what the human body can do. Few posts will so stimulate a man to keep abreast of the changing improvements and discoveries of the science, and in few will his reward be greater in seeing the salutary effects of a skilful treatment, perhaps unaided and undivided in his position and responsibility.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—James Little, M.D., F.R.C.P.I.

General Secretary—William Thomson, F.R.C.S.I.

SECTION OF SURGERY.

President—Sir W. Thornley Stoker, F.R.C.S., President of the Royal College of Surgeons in Ireland.

Sectional Secretary—Kendal Franks, F.R.C.S.I.

Friday, November 8, 1895.

The President in the Chair.

Colotomy.

Mr. Wheeler read a communication on this subject. [It will be found at page 1].

Lumbar Colotomy.

Mr. Henry Gray Croly read a paper on left lumbar colotomy, and stated that he had, during the past twelve years, performed that operation eighteen times. With one exception, the operations were performed for cancer recti, and the cases were unsuited for excision; no death occurred from the operation. Two of the patients (notwithstanding careful antiseptic precautions) were attacked with erysipelatous inflammation and septic or erysipelatous pneumonia, but recovered. In each case great relief was afforded to the sufferers. The patients lived from a few months to over two years; one man worked for nearly two years after the operation as a Corporation labourer. All the patients got fat and expressed themselves gratefully for the relief afforded to their sufferings. Mr. Croly said he did not intend to compare the lumbar operation with the now more fashionable inguinal operation, but thought it his duty to place on record brief notes of the cases.

Mr. Croly adopts the oblique incision of Bryant, and in his hospital practice marks out the crest of the ilium—last rib and erector spinæ muscles; he has invariably found the colon half an inch behind the centre of the crest. Mr. Croly opens the intestine

at once and makes an opening not longer than half an inch, and has thus prevented the prolapsus which occurred in some of his early cases. The following difficulties Mr. Croly has encountered in performing the lumbar operation—viz., on one occasion the gut was collapsed and the kidney presented, but the intestine was soon found; in two cases the distance between the crest of the ilium and last rib was very short, and consequently the wound was deep. Mr. Croly has found considerable help by having the intestine inflated by means of Higginson's syringe and by rolling the patient backwards when the gut "hops out." Mr. Croly feeds his patients after operation on soups, eggs and milk, and has the lower bowel carefully washed out with antiseptics. Each of Mr. Croly's cases came to him as "pile cases," and one patient was under treatment for dysentery in a clinical hospital for several months, and no digital or other examination had been made of the rectum. Mr. Croly claimed for lumbar colotomy its extra-peritoneal advantage, and he considers the position of the artificial anus in the loin less disgusting to the patient than the inguinal.

The PRESIDENT expressed surprise that lumbar colotomy should be advocated at the present time. Mr. Bryant's name had been brought forward as supporting it. He did not agree with Mr. Bryant's views with regard to lumbar colotomy. Mr. Wheeler sutured the peritoneum to the skin. He found that a much better anus was formed if this was not done, but the bowel was allowed to join the muscular and fibrous coat as well. He thought that in some cases the gut might be cut across, and so any chance of fæcal matter passing into the distal part prevented.

SIR WILLIAM STOKES said he had listened with great interest to the two communications. The more experience he had of lumbar colotomy the more highly did he think of it. Still he did not think ill of the anterior operation. Through Mr. Croly's courtesy he had seen some of his operations, and he said that the photographs well represented the excellent results obtained. One advantage of the lumbar over the inguinal operation, pointed out by Mr. Henry Morris, was that, as the patient had to lie on his back for a considerable period after the operation, there was a better chance of fæcal drainage. In the anterior operation hard masses of fæces frequently blocked the opening when it was made low down. In the lumbar operation the gut could be opened without opening the peritoneum in a large proportion of cases. The anterior operation had, however, the advantage of the greater facility and comfort by which the toilet of the patient could be performed.

DR. FITZGIBBON spoke from personal observation of the in-

variable relief from pain and the prolongation of life which followed lumbar colotomy. He had also performed two inguinal colotomies, one of which was an illustration of the disadvantage of inguinal as compared with lumbar colotomy. The subject was a woman admitted to the Westmoreland Lock Hospital in July, 1892, suffering from a syphiloma of the rectum, which occluded it. There was an artificial anus opening into the vagina. She objected at the time to a colotomy, so he enlarged the opening into the vagina and relieved the symptoms of obstruction from which she was suffering. She left but returned again, as the syphiloma had extended into the vagina. He performed a left inguinal colotomy. She completely recovered. She returned in October, 1893, complaining of prolapse of the artificial anus, which could not be kept returned. She was pregnant at the time. After delivery the prolapse could not be kept back.

Mr. Kendal Franks said that, with regard to the advantage of dependent drainage in lumbar colotomy, mentioned by Sir William Stokes, he did not see why a patient operated on by the inguinal method should not be turned on his side. One of the great reasons why inguinal colotomy had met with so much favour was the greater ease with which the sigmoid flexure could be found, compared with the finding of the descending colon in the lumbar operation; also, it was not always easy to know what piece of intestine presented in lumbar colotomy. The extended use of excision of the rectum, especially by the trans-sacral method, was gradually turning colotomy out of the field, so that colotomy, he believed, would soon become a very exceptional procedure.

Mr. M'Ardle agreed with the President's views with regard to lumbar colotomy. If the anterior operation was carried out fairly high up, where the bowel was readiest of access, there should be no danger. He also agreed with the President that the peritoneum should not be sutured to the skin. He passed a supporting needle or peg beneath the bowel, but did not pass any silk through the bowel. He did not use any sutures. The operation lasted only a very short time, and he thought this of great importance.

Mr. Wheeler, replying, said that in his opinion the anterior operation is preferable and safer, but that in some cases the lumbar operation should be done. He thought that cutting the gut and returning it into the abdomen was bad surgery, as the superior end may have been sutured instead of the inferior, and symptoms of strangulation may follow from fæces remaining in the distal portion, or the foreign body may ulcerate through. He had found that suturing the mesentery at the distal end kept the prolapse in

abeyance. He did not think a catheter under the bowel formed as good a spur as suturing the peritoneum.

Mr. Croly said he believed the mortality was greater in inguinal than in lumbar colotomy. He thought that the lumbar colotomy should not be shirked because it was a more difficult operation. In his paper he had not intended to compare inguinal and lumbar colotomy.

The Section then adjourned.

SECTION OF OBSTETRICS.

President—Lombe Atthill, M.D.

Sectional Secretary—Dr. F. W. Kidd.

Friday, November 22, 1895.

The President in the Chair.

Ectopic Gestation ; Three Specimens.—Dr. W. J. Smyly showed the following specimens:—

1. The right tube was enlarged and ruptured; the left also was enlarged, and the ovary of same side was cystic. Operation in consequence of commencing putrefaction of hæmatocele; recovery.

2. Uterus and gestation sac containing placenta, also full term macerated fœtus, 21 inches long, removed two months after term. The uterus was so much involved in the gestation sac, which had evidently been originally interstitial, that its total removal was considered advisable. Recovery.

3. Ruptured tubal pregnancy of right tube; left tube and ovary had been previously removed for suppuration, following birth of only child 15 months previously. Admitted to hospital in very bad health. Enlarged right tube, ruptured during bimanual examination; collapse; abdominal section; recovery delayed by inflammation of left kidney.

Double pyosalpinx ; two specimens.—Both recovered.

Uterus removed in a similar case.—Abdominal section; attempt to remove tubes failed after rupture of one with extravasation of pus; vaginal hysterectomy; abdominal cavity shut off with Mikulicz's bag; recovery.

Pedunculated myoma, larger than adult fist. The soft tumour was diagnosticated as a dermoid of left ovary, but found to be a myoma; recovery.

Myomatous uteri; four specimens.—1. Patient had been greatly reduced by weeks of septic fever and constant pain; uterus curetted

and cancer diagnosticated by microscope. The organ, which was about twice the normal size, was removed per vaginam, by morcellement; immediate relief from pain and fever; recovery rapid.

2. Uterus weighing 2 lbs. removed for bladder symptoms; a myoma as large as an adult fist enucleated from left broad ligament with difficulty, and a pedunculated myoma of same size easily removed after the uterus. Bladder trouble continues, but is improving; convalescence otherwise good.

3. Myomatous uterus removed twelve hours previously; fragments weighed 3 lbs.; doing well; pulse 88; T. 98·2°.

4. Myomatous uterus removed by abdominal section, by Martin's method, panhysterectomy; patient, who was very anæmic at time of operation, died in twelve hours.

Cancerous tumour of left ovary.—Operation simple; sudden and severe internal hæmorrhage same evening; abdomen re-opened, bleeding controlled, and abdomen cleared of clots; convalescence uneventful until 9th day; complete paraplegia with anæsthesia, loss of reflexes in lower limbs, and paralysis of bladder; some fever for a week, then normal temperature, but paralysis persists.

Referring to the second case of ectopic gestation—

Dr. Macan pointed out that the ureter on one side was in close relation with the sac, and that there must have been great danger of wounding it.

Fibromyoma removed from Cervix Uteri.

Dr. E. Winifred Dickson exhibited a fibromyoma removed from cervix uteri.

The patient was a 4-para, aged thirty. The last pregnancy had ended a few weeks previously, at $6\frac{1}{2}$ months; there had been severe hæmorrhage on this occasion, and the tumour had been then diagnosticated. The symptoms had been slight, consisting only of a dragging sensation in the pelvis, dating for a year back, and some glairy discharge. The tumour was attached by a short broad pedicle to the front and left side of the cervical canal from the os externum to nearly the os internum. The posterior lip was hypertrophied, and the glands much enlarged. The tumour was removed with scissors, and the edges of the wound united with sutures. There was not much hæmorrhage. The patient made an uninterrupted recovery.

Dr. Macan said the tumour would cause great trouble in parturition.

Dr. Smyly remembered only two specimens of myoma of the

cervix which had been shown to the Academy. One of these was by himself.

Dr. Alfred Smith remembered one which Dr. Macan had exhibited, and in which there were adhesions between it and the vagina.

Large Uterine Fibrocystic Tumour.

Dr. Alfred Smith showed a uterus with large fibro-cystic tumour, which was removed by complete hysterectomy. The tumour extended one finger's breadth above umbilicus, was very elastic, and growing rapidly. Palpation showed that the tumour had a long pedicle, and several small daughter cysts growing from fundus of tumour. *Vaginal examination*—Uterus separated from tumour by broad pedicle; its fundus was well studded with small fibromata, and was greatly enlarged. Diagnosis was made of ovarian tumour. *Abdominal section* revealed a fibro-cystic pedunculated tumour growing from the left side of the uterus, and the fundus of the uterus invested with small fibroids. The entire removal of tumour and uterus was determined upon. The broad ligaments were tied and cut in ordinary fashion. The uterine artery was tied separately. The only difficulty experienced was in finding the vagina. Great assistance was obtained by pushing up cervix with hand in vagina and cutting down on it. All the long ligatures to the broad ligament were tied in a bundle and passed into the vagina. Recovery rapid.

Vaginal Hysterectomy.

Dr. R. A. Flynn exhibited a uterus removed by vaginal hysterectomy for cancer.

Mrs. T., aged forty-six, had ten children, the last of which I attended her on four and a half years ago. Patient consulted me in January last for backache and pain in left side.

On vaginal examination I found the os uteri turned towards the anterior vaginal wall; cervix lacerated; and through the posterior vaginal wall I found the corpus uteri lying backwards on bi-manual examination. Retroversion of the uterus; uterus quite movable; adnexa normal; the sound passed two and a half inches, causing neither hæmorrhage nor pain; the point passed backwards. The speculum showed nothing abnormal. The uterus was easily replaced bi-manually, and a No. 8 Smith's pessary was introduced. I saw patient a week afterwards, and found the uterus in good position and her symptoms relieved.

I did not see patient again until November 3rd, when she con-

sulted me for menorrhagia which had lasted two months. Vaginal examination: Cervix enlarged, with its tissues so friable that it could easily be broken down with the finger, causing considerable hæmorrhage. On bi-manual examination I found the uterus normal in size and position; adnexa normal; the speculum showed a large ulcerated cervix. I removed the pessary and the uterus went very quickly into the position of retroversion.

I now removed a piece of the cervix with a knife for microscopic examination, and sent the tissue removed to the Clinical Research Association, London, and received the following report on Nov. 9th:—"The specimen removed from the cervix uteri shows an early infiltration of the tissues with a squamous-celled epithelioma." Dr. Smyly kindly saw the patient with me on Nov. 11th, and agreed with me that it was a favourable case for vaginal hysterectomy.

The operation was performed on Nov. 14th, the broad ligament being secured with Landon's clamp forceps; the clamps were removed in 48 hours. The patient has, up to the present (Nov. 22nd)—nine days after the operation—made an uninterrupted recovery. The case I regard with hopefulness, as I was fortunate in getting her at an early stage, that there is a good chance of the non-recurrence of the growth.

Dr. Macan wished to know what length of time had passed between the two examinations.

Dr. Flynn said they took place in January and December.

"*Brief Sketches copied from my Breviary, of the priceless sayings of other men, with some remarks showing what valuable outposts they were in helping me to extend the boundaries of my knowledge, and to avert death while practising the Obstetric Art.*"

Dr. Walter Bernard, Londonderry, read a paper with the above title. [It will be found at page 14.]

Dr. Macan said they had listened with great pleasure to his paper, which had touched on almost every subject of midwifery. They felt very much indebted to him for coming from Londonderry to read it.

The Section then adjourned.

SECTION OF PATHOLOGY.

President—Conolly Norman, F.R.C.P.I.
Sectional Secretary—John B. Story, M.B., F.R.C.S.I.

Friday, November 29, 1895.

The President in the Chair.

Tumours of the Kidney composed of Suprarenal Tissue.

Dr. McWeeney described two new cases of this condition, and discussed the subject, which has hitherto escaped notice from English-speaking pathologists. His first case was that of a left kidney successfully removed by Mr. Coppinger at the Mater Misericordiæ Hospital in March, 1892, from a woman, aged fifty-three, who is still alive and well. The lower part of the kidney is converted into a large cyst, from which a bowlful of brain-like hæmorrhagic material was evacuated during the operation. The walls of the cyst are ragged and covered with adherent masses of tumour-tissue. The second case was that of a woman, aged thirty-eight, from whom a huge mass of confluent tumour-nodules occupying the position of the left kidney was removed by Mr. Lentaigne at the Mater last September. The only recognisable part of the kidney left was its upper extremity. The nodules were not unlike liver in appearance and consistency; many were as large as the closed fist; all were distinctly encapsuled, and none showed signs of advanced degenerative change. Microscopically these two tumours agreed in their close resemblance to the suprarenal cortex. They consisted of large polygonal or cutical epithelial cells, with a small, round, centrally-placed nucleus, arranged without intercellular substance in elongated rows or circular groups separated by blood capillaries. The tumour-cells were placed directly on the capillary wall, which simply consisted of a line of endothelial nuclei. In the first tumour the deposition of fat and glycogen was a marked feature. There was but little fat and no glycogen in the second. This would appear to show that the deposition of glycogen is not, as Lubarsch supposes, an essential feature of tumours of this kind, but is merely associated with retrogressive change. The origin of certain tumours of the kidney from suprarenal "rests" was first pointed out by Grawitz, in 1883. His results were extended and generalised by Horn. Beneke and Askanazy added fresh cases to this new category of kidney tumours, whilst others took a different view of their origin, de Paoli regarding them as angio-sarcoma, Driessen as endothelioma, and Sudeck and Sabourin

as derived from renal tubules. These views were discussed, and the writer came to the same conclusion as Lubarsch—viz., that they must really be considered as derived from dislocated suprarenal elements. He discarded Virchow's expression *struma*, as applied by Grawitz to these growths. Attention was drawn to the fact that English writers such as Rolleston speak of adenoma and carcinoma of the suprarenals, whilst admitting their mesoblastic origin. The relations of embryology to tumour classification must be further cleared up before we can place these growths either amongst the sarcomata or the carcinomata. Thirty-two such cases are now on record, many of which took a malignant course and formed metastatic deposits in various organs. Nephrectomy had proved a very fatal procedure even in the absence of peritonitis and uræmia. In one of the cases now brought forward, two pounds of morphologically perfect suprarenal cortex, free from degenerative change, were present in the body—a fact not without significance in view of the high physiological activity now known to be possessed by this tissue. Perhaps the system had had time to become acclimatised during the growth of the tumour. In conclusion, the writer had no doubt that many cases belonging to this category had occurred in England, but had been recorded under different names. The object of this paper was to draw the attention of English-speaking pathologists to this interesting form of renal tumour. The contribution was illustrated with lantern slides from micro-photographs by Mr. A. Pringle.

Dr. O'Sullivan said he believed the paper was the most complete description in English of these tumours. When in Vienna last summer he had seen two of these growths. The first was like Dr. McWeeney's first. It was an encapsuled mass, confined to the upper part of the kidney, and consisted of pultaceous material infiltrated with blood. There was no metastasis. No microscopic examination was made. The other was of more pathological importance, since in the kidney itself there were several masses of the same character, but also a considerable amount of metastasis in the bones. A piece of the tumour in one of the bones was taken and pressed out on a slide. The cells were arranged in fasciculi. The hæmorrhages seemed to be very frequent, and might be compared to the hæmatomata so frequently met in the suprarenal. He could not imagine these tumours spoken of as lipomata.

The President said the Academy should be congratulated on having received such a learned paper from Dr. McWeeney. There was a case published in the *Journal of Pathology*, about three years ago, by Kanthack and Rolleston resembling in many ways that

described by Dr. McWeeney. Another case, not mentioned by Dr. McWeeney, was published in France, in 1882, of adenomata of the kidney. It was argued that adenomata of the kidney were almost invariably associated with a cirrhotic condition of the kidney. He had himself brought before this Section a somewhat similar case. It occurred in an elderly man who was dying of cirrhosis of the kidney. There was a tumour projecting from the right kidney, about the size of a small kidney bean. It was not accompanied by metastasis. The tumour consisted of double rows of cylindrical epithelial-like cells, which contained towards their base a well-staining nucleus. The rows of cells were occasionally very like convoluted tubules. It was separated from the degenerated kidney substance by a dense fibrous capsule. There were numerous hæmorrhages and spaces lined by delicate endothelium; some contained blood, and some were empty. There was a great deal of fat. He thought it possible that the confusion which attended the subject might be accounted for by the fact that different tumours were included under one name.

Dr. McWeeney, replying, said that he had made a mistake in not looking up more thoroughly the English literature on the subject. He had, however, consulted Dr. Rolleston's Lectures on the Suprarenal Capsule, which were most exhaustive. In the class of cases Dr. McWeeney was referring to, the tumour originated in the kidney, altogether apart from the suprarenal. In both of his cases the tumour originated in the lower end of the kidney. Because adenomata occurred in a cirrhosed kidney, it did not follow that they were caused by it. The fully formed tissue of these tumours is not like urinary tubules. In the cortex of the human suprarenal, but more especially in that of the higher mammals, pseudo-tubular structures of the same kind were found by Creighton, Marchand, Pfaundler, and others.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.;
F.R.C.P.I.; F. R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, February 22, 1896.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Feb. 1.	Feb. 8.	Feb. 15.	Feb. 22.		Feb. 1.	Feb. 8.	Feb. 15.	Feb. 22.
Armagh -	7·0	14·0	21·0	21·0	Limerick -	36·5	26·7	18·2	40·7
Belfast -	27·3	26·9	22·6	22·2	Lisburn -	8·5	25·7	12·8	38·3
Cork -	22·1	38·8	25·6	26·3	Londonderry	25·1	23·6	25·1	23·6
Drogheda -	35·1	17·6	30·7	8·8	Lurgan -	13·7	9·1	31·9	22·8
Dublin -	25·7	23·9	21·9	18·9	Newry -	44·3	28·2	20·1	8·1
Dundalk -	12·6	16·8	12·6	8·4	Sligo -	35·5	20·3	25·4	20·3
Galway -	18·9	15·1	3·8	15·1	Waterford -	42·5	22·5	25·0	22·5
Kilkenny -	18·9	14·2	14·2	14·2	Wexford -	22·6	27·1	18·1	31·6

In the week ending Saturday, February 1, 1896, the mortality in thirty-three large English towns, including London (in which the rate was 17·8), was equal to an average annual death-rate of 18·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·5 per 1,000. In Glasgow the rate was also 19·5. In Edinburgh it was 15·8.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 26·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·5 per 1,000, the rates varying from 0·0 in twelve of the districts to 4·5 in Wexford—

the 5 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 145 deaths from all causes registered in Belfast are 4 from scarlatina, 2 from typhus, 6 from whooping-cough, 3 from enteric fever, and 1 from diarrhœa. The 26 deaths in Limerick comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 179—102 boys and 77 girls; and the registered deaths to 178—84 males and 94 females.

The deaths, which are 34 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·5 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 25·7 per 1,000. During the first five weeks of the current year the death-rate averaged 26·7, and was 7·6 under the mean rate for the corresponding period of the ten years 1886–1895.

Only 11 deaths from zymotic diseases were registered, being 13 below the average for the corresponding week of the last ten years, and 7 under the number for the previous week. They consist of 1 from scarlet fever (scarlatina), 4 from influenza and its complications, 2 from whooping-cough, 1 from ill-defined fever, 2 from enteric fever, and 1 from diarrhœa.

No cases of small-pox were admitted to hospital. The 5 patients in hospital at the close of the preceding week remained under treatment on Saturday.

The number of cases of enteric fever admitted to hospital was 13, being 1 under the admissions for the preceding week. Twelve patients were discharged, and 71 remained under treatment on Saturday, being 1 over the number in hospital on that day week.

The weekly number of cases of scarlatina admitted to hospital, which had fallen from 28 in the week ended January 18 to 22 in the following week, further declined to 16. Nineteen patients were discharged, 1 died, and 131 remained under treatment on Saturday, being 4 under the number in hospital at the close of the preceding week.

Forty-five deaths from diseases of the respiratory system were registered, being 3 over the number for the preceding week, but 9 under the average for the fifth week of the last ten years. They comprise 27 from bronchitis and 15 from pneumonia or inflammation of the lungs.

In the week ending Saturday, February 8, the mortality in thirty-three large English towns, including London (in which the

rate was 20·7), was equal to an average annual death-rate of 20·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·8 per 1,000. In Glasgow the rate was 19·2, and in Edinburgh it was 17·7.

The average annual death-rate in the sixteen principal town districts of Ireland was 25·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in ten of the districts to 5·1 in Sligo—the 4 deaths from all causes registered in that district comprising 1 from diphtheria. Among the 143 deaths from all causes registered in Belfast are 3 from measles, 1 from scarlatina, 4 from whooping-cough, 1 from diphtheria, 3 from enteric fever, and 2 from diarrhœa. Among the 56 deaths in Cork are 2 from enteric fever. The 15 deaths in Londonderry comprise 1 from whooping-cough and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 217—102 boys and 115 girls; and the registered deaths to 165—76 males and 89 females.

The deaths, which are 38 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·6 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 23·9 per 1,000. During the first six weeks of the current year the death-rate averaged 26·4, and was 7·3 under the mean rate for the corresponding period of the ten years 1886–1895.

The number of deaths from zymotic diseases registered was 16, being 5 over the low number for the preceding week, but 4 under the average for the sixth week of the last ten years. The 16 deaths comprise 1 from scarlet fever (scarlatina), 4 from influenza and its complications, 2 from whooping-cough, 2 from enteric fever, and 5 from diarrhœa.

No cases of small-pox were admitted to hospital. One small-pox patient was discharged, and 4 remained under treatment in hospital on Saturday.

The number of cases of enteric fever admitted to hospital was 9, being 4 under the admissions in the preceding week and 5 under those in the week ended January 25. Nineteen patients were discharged, 2 died, and 59 remained under treatment on Saturday, being 12 under the number in hospital at the close of the preceding week.

There has been a further decline in the number of cases of

scarlatina admitted to hospital, the admissions being 12, or 4 under the admissions in the preceding week, 10 under the number admitted in the week ended January 25, and 16 under the admissions in the week ended January 18. Twenty patients were discharged, and 123 remained under treatment on Saturday, being 8 under the number in hospital on the previous Saturday.

The number of deaths from diseases of the respiratory system registered was 36, being 15 below the average for the corresponding week of the last ten years, and 9 under the number for the previous week. The 36 deaths comprise 24 from bronchitis and 7 from pneumonia or inflammation of the lungs.

In the week ending Saturday, February 15, the mortality in thirty-three large English towns, including London (in which the rate was 20·3), was equal to an average annual death-rate of 19·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·1 per 1,000. In Glasgow the rate was 20·0, and in Edinburgh it was 19·7.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 22·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·5 per 1,000, the rates varying from 0·0 in ten of the districts to 9·1 in Lurgan—the 7 deaths from all causes registered in that district comprising 1 from scarlatina and 1 from diphtheria. Among the 120 deaths from all causes registered in Belfast are 1 from measles, 3 from scarlatina, 4 from whooping-cough, 2 from diphtheria, 1 from simple continued fever, and 1 from diarrhœa. The 37 deaths in Cork comprise 1 from whooping-cough and 1 from enteric fever.

In the Dublin Registration District the registered births amounted to 169—91 boys and 78 girls; and the registered deaths to 151—68 males and 83 females.

The deaths, which are 66 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·5 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 21·9 per 1,000. During the first seven weeks of the current year the death-rate averaged 25·8, and was 7·7 under the mean rate for the corresponding period of the ten years, 1886–1895.

Only 9 deaths from zymotic diseases were registered, being 13

below the average for the corresponding week of the last ten years, and 7 under the number for the previous week. They consist of 2 from scarlet fever (scarlatina), 1 from influenza, 2 from whooping-cough, 3 from enteric fever, and 1 from diarrhœa.

No cases of small-pox have been admitted to hospital since the week ended January 25. One small-pox patient was discharged in the course of the week, and 3 patients remained under treatment in hospital at its close.

Ten cases of enteric fever were admitted to hospital against 9 admissions in the preceding week, and 13 in the week ended February 1. Nine patients were discharged, and 60 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

The weekly number of cases of scarlatina admitted to hospital, which had gradually fallen from 28 for the week ended January 18 to 12 for the week ended February 8, rose to 27. Fifteen patients were discharged, 1 died, and 134 remained under treatment on Saturday, being 11 over the number in hospital on that day week.

Diseases of the respiratory system caused 36 deaths, being equal to the number in the preceding week, but 20 below the average for the seventh week of the last ten years. The 36 deaths comprise 19 from bronchitis, 13 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, February 22, the mortality in thirty-three large English towns, including London (in which the rate was 20·0), was equal to an average annual death-rate of 19·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·5 per 1,000. In Glasgow the rate was 20·3, and in Edinburgh it was 18·6.

The average annual death-rate in the sixteen principal town districts of Ireland was 21·6 per 1,000 of the population.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 0·8 per 1,000, the rates varying from 0·0 in eleven of the districts to 4·7 in Kilkenny—the 3 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 118 deaths from all causes registered in Belfast are 1 from measles, 2 from scarlatina, 2 from whooping-cough, 1 from diphtheria, 1 from enteric fever, and 2 from diarrhœa. The Registrar for Dundalk remarks:—"Influenza is appearing."

In the Dublin Registration District the registered births amounted

to 193—96 boys and 97 girls; and the registered deaths to 133—63 males and 70 females.

The deaths, which are 80 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 19·8 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 18·9 per 1,000. During the first eight weeks of the current year the death-rate averaged 25·1, and was 8·2 under the mean rate for the corresponding period of the ten years, 1886–1895.

Only 8 deaths from zymotic diseases were registered, being 1 under the low number for the preceding week, and 12 below the average for the eighth week of the last ten years. They comprise 1 from scarlet fever (scarlatina), 5 from influenza and its complications, and 1 from enteric fever.

One case of small-pox was admitted to hospital. It is the only case of the disease admitted since the fourth week in January. Four small-pox patients remained under treatment in hospital on Saturday.

Eleven cases of enteric fever were admitted to hospital, against 10 in the preceding week and 9 in that ended February 8. Twelve patients were discharged, 2 died, and 57 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

The number of cases of scarlatina admitted to hospital was 15, being 12 under the admissions in the preceding week, but 3 over those in the week ended February 8. Thirty patients were discharged, 1 died, and 118 remained under treatment on Saturday, being 16 under the number in hospital at the close of the preceding week.

Only 25 deaths from diseases of the respiratory system were registered, being 34 below the average for the corresponding week of the last ten years, and 11 under the number in the previous week. They comprise 10 from bronchitis and 7 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of February, 1896.

Mean Height of Barometer,	30·237 inches.
Maximal Height of Barometer (on 3rd at 9 a.m.),	30·642 „
Minimal Height of Barometer (on 19th, at 9 p.m.),	29·420 „
Mean Dry-bulb Temperature,	44·3°.
Mean Wet-bulb Temperature,	42·4°.
Mean Dew-point Temperature,	40·2°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·251 inch.
Mean Humidity,	86·2 per cent.
Highest Temperature in Shade (on 8th),	56·7°.
Lowest Temperature in Shade (on 18th),	31·9°.
Lowest Temperature on Grass (Radiation) (on 18th),	28·8°.
Mean Amount of Cloud,	65·5 per cent.
Rainfall (on 10 days),	·868 inch.
Greatest Daily Rainfall (on 25th),	·320 inch.
General Directions of Wind,	W., S.S.E., S.W.

Remarks.

A fine, dry, mild, often genial month—a complete contrast to February, 1895, which had been the coldest experienced for forty years. There was neither snow nor hail, and very little frost occurred in Ireland, scarcely any in or near Dublin. The mean temperature was not less than 11 degrees above that of February, 1895, while it was also 2·4° above the average. Absolute drought prevailed from the 9th to the 18th, inclusive, and three-eighths of the entire rainfall for the month was measured on the 25th.

In Dublin the mean temperature (45·2°) was 2·4° above the average (42·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 44·3°. In the thirty-one years ending with 1895, February was coldest in 1895 (M. T. = 34·2°), and warmest in 1869 (M. T. = 46·7°).

The mean height of the barometer was 30·237 inches, or 0·382 inch above the average value for February—namely, 29·855 inches. The mercury rose to 30·642 inches at 9 a.m. of the 3rd, and fell to 29·420 inches at 9 p.m. of the 19th. The observed range of atmospheric pressure was, therefore, 1·222 inches—that is, a little less than an inch and a quarter.

The mean temperature deduced from daily readings of the dry

bulb thermometer at 9 a.m. and 9 p.m. was 44·3°, or 10·7° above the value for February, 1895. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*min.* × ·50), the M. T. is 45·2°, compared with a twenty-five years' average of 42·8°. On the 8th the thermometer in the screen rose to 56·7°—wind, W.S.W.; on the 18th the temperature fell to 31·9°—wind, calm. The minimum on the grass was 28·8°, also on the 18th.

The rainfall was only ·868 inch, distributed over 10 days. The average rainfall for February in the twenty-five years, 1865–89 inclusive, was 2·150 inches, and the average number of rainy days was 17·2. The rainfall, therefore, and also the rainy days, were much below the average. In 1883 the rainfall in February was large—3·752 inches on 17 days; in 1879, also, 3·706 inches fell on 23 days. On the other hand, in 1891, only ·042 inch was measured on but 2 days. The rainfall in 1891 was much the smallest recorded in February for very many years. The record is probably unparalleled in Dublin—·042 inch on 2 days. The nearest approach to this drought was in September, 1865, when only ·056 inch of rain was measured on but 3 days.

Neither hail, nor sleet or snow fell.

The atmosphere was foggy on 8 days—namely, the 1st, 2nd, 4th, 5th, 14th, 16th, 18th, and 21st. The amount of cloud—65·5 per cent.—was almost exactly the average—66 per cent. High winds were noted on 8 days, but never reached the force of a gale. A lunar halo was seen on the 25th. Faint aurora appeared on the 18th.

The temperature reached or exceeded 50° in the screen on 15 days, and it only once fell below 32°, compared with as many as 18 nights in 1895, only 2 nights in 1894, 5 nights in both 1893 and 1892, and 2 nights in 1891. The minima on the grass were 32°, or less, on 10 nights, compared with every night in 1895, 10 nights in 1894, 13 nights in 1893, 16 nights in 1892, and 17 nights in 1891. The thermometer never failed to rise to or above 40° in the screen during the daytime.

Generally fine and singularly mild and open weather prevailed during the week ended Saturday, the 8th, the mean temperature of which was in Dublin 47·2°, or 15·6° above that of the corresponding period of 1895, viz., 31·6°. The distribution of atmospheric pressure over North-western Europe was similar to that so persistently prevalent during the present season. An anticyclone held sway in France, Germany, and over the southern half of the United Kingdom. A series of Atlantic depressions moved eastwards across Scandinavia and Lapland. Only on Friday did the areas of low pressure encroach to a marked extent on the Irish and

Scotch coasts. On Saturday, however, cyclonic conditions seemed fully established throughout the British isles. As commonly happens, very frosty nights were observed within the central area of the anticyclone, and the period was decidedly cold in France and Germany. In England also sharp frosts were reported on the nights of Sunday and Monday—in Ireland the week was frostless, and on Friday temperature became remarkably high for the time of year. Rain fell freely on Saturday morning, but the afternoon was like April or the end of September. At 8 a.m. of Friday the thermometer ranged from—8° at Haparanda, on the Gulf of Bothnia, to 53° at Valentia Island. Twenty-four hours earlier, temperature had been 29° degrees at Haparanda, or 37° higher. In Dublin the mean atmospheric pressure was 30·366 inches, the barometer rising to 30·642 inches at 9 a.m. of Monday (wind S.S.E.), and falling to 29·822 inches at 9 a.m. of Saturday (wind S.W.). The corrected mean temperature was 47·2° The mean dry bulb temperature was 46·6°. On Tuesday the screened thermometers sank to 36·8°, on Saturday they rose to 56·7°. The rainfall amounted to ·214 inch, on three days, ·089 inch being registered on Friday and ·100 inch on Saturday. The prevailing winds were S.S.E. and S.W.

During the week ended Saturday, the 15th, the weather was very favourable—at first it was of the south-westerly type, warm and windy; afterwards it became more decidedly anticyclonic in character, quiet, gray, and cold, as well as dry. Until Thursday an area of high atmospheric pressure, with central readings of about 30·60 inches, lay directly over France; whereas the barometer was low over Scandinavia, and gradients for S.W. and W. winds were steep over Scotland, Ireland, and the North of England. In the districts named, mild, breezy weather prevailed, and the amount of cloud, after Sunday, was large. The week opened with warm, rainy weather in the S.E. of England, but this soon gave place to calm, foggy, and (at night) cold weather. On Thursday, the area of highest pressure—30·40 inches and upwards—embraced the United Kingdom and West of France, while a depression passed south-eastwards over Lapland to Russia, causing polar winds and a sudden and great fall of temperature in Norway and Sweden. This "chill" ultimately affected the British Isles, where the weather became seasonably cold, while it remained dry in most districts. On Friday and Saturday the anticyclone again gathered strength, and the week closed with a fully-established dry, cold, quiet, gray spell. In Dublin the mean atmospheric pressure was 30·363 inches, the barometer ranging from 30·092 inches at 9 a.m.

of Sunday (wind W.S.W.) to 30·564 inches at 9 p.m. of Saturday (wind E.N.E.). The mean temperature was 46·2°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 44·6°. On Tuesday the screened thermometers rose to 56·3°, on Friday they sank to 33·0°. The prevailing wind was S.W. No rain fell in or near Dublin. At 9 30 a.m. on Monday, a large meteor or aerolite burst in mid-air at a height of 20¼ miles right over Madrid, the explosion shaking that city to its foundations and causing widespread consternation.

The record for the week ended Saturday, the 22nd, is again one of singularly favourable weather. Conditions remained anticyclonic until Wednesday, when a large depression approached the west coast of Ireland, causing changeable, showery, weather for a time. On Saturday there was a return to fair weather, as an anticyclone spread westward from the Continent over the British Isles. Tolerably steady frost held throughout the period in Central Europe, but only occasional night frosts occurred in the United Kingdom, where also the thermometer often rose above 50° during the daytime. In the earlier part of the week, the air was dry and keen, and the amount of cloud was extremely large. The daily range of temperature was consequently not great. On Tuesday, the maximum in Dublin was only 43·2°, at Oxford 38°, at Shields and York only 35°. As the depression approached Ireland, however, the southerly wind brought much more genial temperatures, and on Wednesday the shade thermometer rose to 58° at Cambridge, 57° at Loughborough, 55° in London and at Oxford, and 52·4° in Dublin. A well-marked secondary V-depression lay over St. George's Channel, Cornwall, and Wales on Thursday morning, producing a very general rainfall in Great Britain, but a beautiful, springlike day in Ireland. Showers fell on Friday afternoon, and then the weather again took up, Saturday proving a very bright spring day. In Dublin, the mean height of the barometer was 30·004 inches, pressure ranging from 30·601 inches at 9 a.m. of Sunday (wind E.), to 29·420 inches at 9 p.m. of Wednesday (wind S.S.W.). The mean temperature was 43·5°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 42·7°. The shade temperature fell to 31·9° on Tuesday, and rose to 52·4° on Wednesday. The prevailing wind was S.E. Rain fell on two days to the amount of ·064 inch, ·050 inch being measured on Wednesday. Faint aurora appeared on Tuesday evening.

During the week ended Saturday, the 29th, at first cold and

dry, with anticyclonic S.E. winds, the weather afterwards became mild, damp, cloudy, and often rainy, with fresh cyclonic W. winds. Until Tuesday a large anticyclone stretched south-westwards as far as Ireland from Finland and the Baltic. At 8 a.m. of Monday the barometer read 30·99 inches at Stockholm, and 31·00 to 31·02 inches over the S. of Finland and the neighbouring parts of the Baltic provinces. This system threw a cold easterly current upon Germany, France, and England, while the wind drew anticyclonically into S. over Ireland and S.S.W. over Scotland and Norway. Sharp frost held on the Continent and in Central England—the minima in the screen at Cambridge being 21° on Sunday and Monday nights, and 19° on Tuesday night. During Tuesday the barometer fell briskly in Ireland and Scotland, and towards evening a V-shaped depression had advanced over the former country where it caused an abundant rainfall. At 6 p.m. the wind was S. in the east, but N. in the west of Ireland, and rain was falling in all parts of this island. The V-shaped system afterwards moved north-eastwards to Scotland and dispersed. Depressions now began to move across Northern Europe, while a new anticyclone appeared off the S.W. of Ireland. This distribution of pressure caused fresh westerly winds, clouded skies, a rapid rise of temperature, and more or less rain, followed by snow and hail in Scotland on Saturday. At Loughborough, the thermometer rose 22° (from 25° to 47°) in the 24 hours ending 9 a.m. of Friday. On the evening of this day a fine eclipse of the moon—87 out of 100 parts—was very well seen. In Dublin, the mean atmospheric pressure was 30·174 inches, the barometer rising to 30·329 inches at 9 a.m. of Monday (wind S.S.E.), and falling to 29·855 inches at 9 p.m. of Tuesday (wind S.S.E.). The mean temperature was 44·5°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 44·0°. On Monday the thermometer fell to 34·1°, on Friday it rose to 54·1°. The rainfall was ·460 inch on four days, ·320 inch being registered on Tuesday. The prevalent winds were S.E. and W.

In Dublin the rainfall up to February 29th, 1896, amounted to only 1·588 inches on 24 days compared with 6·336 inches on 33 days in 1895, 4·741 inches on 39 days in 1894, 4·908 inches on 41 days in 1893, 3·817 inches on 39 days in 1892, ·714 inch on 16 days in 1891, and a twenty-five years' (1865–1889) average of 4·350 inches on 34·5 days.

At Knockdolian, Greystones, Co. Wicklow, 1·455 inches of rain fell in February on 10 days. The heaviest fall in 24 hours was ·650 inch on the 25th. The total fall to February 29th inclusive was 1·940 inches on 17 days.

The rainfall in February at Cloneevin, Killiney, Co. Dublin, amounted to ·94 inch on 10 days. The average rainfall for February during 10 years (1885–94) at this station is 1·614 inches on 13·4 days. The greatest rainfall in 24 hours was ·35 inch on the 25th. Since January 1, the rainfall was 1·64 inches on 19 days.

ALCOHOLIC INSANITY IN ITALY.

Dr. A. Volpini has published in *Il Policlinico* an interesting paper on Alcoholic Psychoses in Latium, 1891–1894. He states that the evils of alcoholism are increasing in Italy—as elsewhere; but his researches relate only to Rome and the neighbouring districts, for four years. During this period, of 2,169 patients received into the lunatic asylum at Rome, 340 (15·7 per cent.) owed their psychopathy to alcohol—23·0 per cent. of the males, 4·6 of the females. Every form of mental disease to which alcohol may give rise is included in these 340 cases, all doubtful cases being carefully excluded. Tables are given from which it appears that, as the production and consumption of alcoholic liquors in Italy generally have increased, the number of insane patients admitted to the Roman asylum for alcoholic diseases has grown.

COMMON COLDS.

Dr. L. Duncan Bulkley, in the *Medical Record*, suggests the use of "bicarbonate of soda" as an infallible remedy for a "common cold." He says:—"After many trials I have settled down to the following plan for an adult of medium size and weight. Twenty to thirty grains of the bicarbonate are given in two or three ounces of water, every half-hour, for three doses, and a fourth dose at the expiration of an hour from the last one. Two to four hours are then allowed to elapse, to see the effect, and the four doses are repeated if there seems to be necessity, as is frequently the case. After waiting two to four hours more, the same course may be taken again, although this is not often necessary, if the treatment has been begun early in the course of the "cold." I have known the doses to be repeated four times, with final good result."

LITERARY NOTE.

The Rebman Publishing Co. (11 Adam-street, Strand, W.C.) have ready for immediate publication, a new and important work entitled "Water and Water Supplies," by Dr. J. C. Thresh, of Chelmsford.

PERISCOPE.

EXAMINATION OF CANDIDATES FOR HER MAJESTY'S ARMY AND INDIAN MEDICAL SERVICES, FEBRUARY, 1896.

THE following are the papers set at this examination :—*Chemistry and Materia Medica.*—Dr. Shore. Friday, 7th February, 1896, from 10 a.m. till 1 p.m. N.B.—The replies to be written with the ink provided, and not with a pencil or pale ink. 1. You are given some sulphur and are required to prepare sulphuretted hydrogen from it, how will you proceed? What is the action of sulphuretted hydrogen upon solutions of—(*a*) nitrate of bismuth; (*b*) perchloride of iron; (*c*) arsenious acid; (*d*) caustic potash? 2. Give an account of the action of—(1) nitric acid, (2) sulphuric acid upon metals. In what way may the action be modified by dilution and by temperature? 3. Distinguish between an antiseptic, a disinfectant, and a deodorizer. Make your answer clear by giving examples and explaining their several actions. 4. Give an account of the following drugs, stating briefly their actions :—(1) squill; (2) ipecacuanha; (3) pilocarpine; (4) cocaine. 5. Describe the principal measures by which active diaphoresis may be produced. State the pathological conditions in which this form of treatment is suitable.

Surgery.—Sir Willliam MacCormac. Friday, 7th February, 1896, from 2 to 5 p.m. All four questions to be answered. 1. Give the causes and symptoms, and fully describe the treatment of a case of senile gangrene of the foot. 2. What causes may occasion secondary hæmorrhage? Describe a case, and give the treatment of this complication occurring, for example, after amputation of the leg in the upper third of the limb. 3. Describe the operations performed for the various forms of talipes, with the limitations of tenotomy. What histological changes take place in the tendon and its sheath after division? 4. Give an account of the diseases of the thyroid gland, with their symptoms, diagnosis, and surgical treatment.

Anatomy and Physiology.—Mr. Makins. Saturday, 8th February, 1896, from 10 a.m. till 1 p.m. 1. Describe the capsular ligament of the hip joint and its accessory bands; and give in their respective positions the muscles, tendons, and bursæ, in direct contact with it. 2. Describe the arrangement of axillary lymphatic glands, mentioning the source and destination of the afferent and efferent

lymphatic vessels. 3. Trace the auditory nerve from its ultimate origin to its terminal distribution, giving its connections and branches. State what is known concerning the functions of the vestibule, semi-circular canals and cochlea (anatomy of these parts not required). 4. What factors are concerned in the maintenance of the blood pressure? How may it be determined in animals? What influence does its rise and fall exercise on the venous and pulmonary circulations?

Medicine.—Dr. Allchin. Saturday, 8th February, 1896, from 2 to 5 p.m. 1. State the diagnosis you would have formed of the following case and the grounds of your opinion. Describe the *post-mortem* appearances you would expect to find:—K. B., female, aged thirty-four, housewife, was admitted to the hospital 22nd November, 1895, suffering from extreme weakness, difficulty of breathing, and swelling of the abdomen. The history obtained showed nothing of special importance in respect to her family, except that both parents had suffered from "rheumatism." She had four brothers and one sister living, all healthy. The patient was born and had always lived in London. Was married ten years ago, and for seven or eight years previously had been in domestic service. Since her marriage did no work other than that of the house. Had one child seven years ago; no miscarriages. Suffered from rheumatic fever at the age of sixteen years, and again ten years after, when she was laid up for ten weeks, this attack following shortly after her confinement. Appetite generally good and bowels regular. Catamenia regular until two months ago. Her present illness dates from her second attack of rheumatic fever eight years ago, after which she suffered from considerable pain in the left side of her chest which was much increased by exertion, so that she has been unable to do any work and has frequently had to keep her bed for a few days at a time ever since. She has suffered from a gradually increasing shortness of breath, especially on exertion, more severe during the past two years, since when there has also been palpitation but only on exertion. Two years ago she suffered from bronchitis, with much cough and expectoration, but latterly she has been almost free from cough. For the past two months her symptoms have been markedly worse, the swelling of the abdomen, which she says was first noticed eight years ago, has recently become much greater, and she has kept her bed entirely. She first noticed her feet began to swell eight weeks ago, but this has somewhat diminished by rest in bed. Shortly after admission to the ward the patient was seen in bed, unable to lie flat. Anæmic with slight icteric tint of conjunctivæ and very moderate cyanosis.

Pupils normal. No arcus senilis. Tongue moist and clean. Temperature normal. Pulse 76, small, soft, and irregular in force and frequency, occasionally dropping a beat. Respiration 26, shallow. The external jugular veins are very much distended and fill from below, exhibiting a pulsation synchronous with the heart beat. Examination of the chest shows it to be of normal shape; no bulging. Respiratory movements slight, but equal on the two sides. No undue fulness of the superficial veins. Cardiac impulse visible in the fifth interspace outside the left nipple, moderately forcible, not heaving, and accompanied by a presystolic thrill. There is visible and palpable epigastric pulsation, and also a slight pulsation visible in the third right interspace near the sternum, but scarcely to be felt. The cardiac dulness extends upwards to the third rib and outwards nearly to the anterior axillary line; continuous with this area a perfectly dull note is obtained on percussion across the chest from the right border of the sternum almost to the right anterior axillary line, reaching upwards on the right side as high as the third rib and becoming continuous with the hepatic dulness below. Over this entire dull region a systolic impulse is to be felt. The percussion note under the right clavicle is slightly "flatter" than under the left. There is perfectly good resonance over the whole back and axillæ. The breath sounds can be heard in front as low as the third rib over both sides, somewhat harsh with prolonged expiration in right infra clavicular region, but no added sounds; there are a few moist râles audible at the left base, but otherwise auscultation discloses nothing abnormal over the back beyond an exceeding loudness of the cardiac sounds especially over the right side. In the region of the heart's apex there is a double murmur, the systolic element being conducted towards the axilla, and a rough murmur preceding and continuing into the systolic, best heard between the nipple and left border of the sternum. Over the lower end of the sternum and well conducted over the right lower front of the chest (*i.e.*, over the dull area above described) is a loud systolic bruit. The legs are distinctly œdematous and equally so, but there is no swelling of the upper extremeties. The abdomen is extremely distended, globular in shape and, except in the lower part of the epigastric region, is everywhere dull, and fluctuation is readily perceptible. There is no special fulness of the superficial veins. The liver can be distinctly felt through the fluid, considerably enlarged, very hard and apparently smooth. Spleen not to be felt. There is a slight watery diarrhœa. Urine, sp. gr. 1022, rather high coloured, and contains a trace of albumen. The patient during the next ten days

was kept in bed and remained much the same, with but slight increase in the discomfort of breathing. The œdema of the legs continued. The irregularity and softness of the pulse became a little more marked, and the girth of the abdomen increased. Urine continued to exhibit a trace of albumen. At the end of that time paracentesis abdominis was performed, and 8¼ pints of clear, high-coloured, serum, with a few fibrinous flakes were withdrawn, to the considerable relief of the patient. The enlargement of the liver was then ascertained to affect the entire organ, which felt smooth and very hard. No enlargement of spleen nor other abnormality of the abdomen. The condition of the urine remained as before, but the œdema of the legs decreased. The improvement in the patient's condition was only temporary and, with a re-accumulation of fluid in abdomen, the dyspnœa and palpitation returned. On 3rd December she was tapped again and a similar quantity of fluid removed. Relief again followed, and considerable improvement in the character of the pulse, the physical signs in the chest remaining about the same. Twice again was paracentesis performed, on 11th and 19th December, nine pints and seven pints of clear serum being withdrawn, but the patient's general condition gradually became worse, and she died on 29th December; the only additional symptoms that were developed being a marked increase in the epigastric pulsation, and for several days frequent vomiting. Towards the end mucous râles was heard over the lungs, and a diminishing resonance over the lungs posteriorily. No rise of temperature. The urine always contained a trace of albumen. 2. Describe the condition to which the term *urœmia* is applied, and discuss its pathology and causation. 3. Discuss the clinical significance you attach to a knowledge of the specific gravity of the urine. 4. Describe in detail the treatment of a case of gall stones.

Natural Sciences.—Dr. Shore. Thursday, 13th February, 1896, from 10 a.m. till 1 p.m. Candidates should answer not more than *six* questions, and they are recommended to confine themselves to *two* branches of science only. *Zoology and Comparative Anatomy*:—1. Write a short account of protoplasm and its properties, as illustrated by some low animal organism. 2. State briefly the characteristics of the group cœlenterata and of its two main divisions. Describe the structure of a medusa. 3. Give an account of the fauna of the Australian Continent, and of the anatomical characteristics of the animals distinctive of this region. *Botany*:—1. Describe the life history of—*spirogyra*, and *mucor*. 2. Give an account of assimilation in plants. 3. State the characters of the natural orders—leguminoseæ, umbelliferæ, and liliaceæ. Mention

any useful products obtained from plants belonging to these orders. *Physics*:—1. Define the terms—force, momentum, work, energy, horse-power, erg, dyne. 2. Describe a method by which the velocity of sound through air may be accurately determined. 3. What is the "mechanical equivalent of heat?" Describe carefully Joule's method for its determination. What precautions are necessary to allow for loss by convection and radiation? *Physical Geography*:—1. What parts have the following agencies played in producing the present physical features of Great Britain:—(*a.*) The sea? (*b.*) Rivers? (*c.*) Land-ice? 2. Give an account of the distribution of rainfall, and state in general terms the causes which determine this distribution. 3. Write a short essay on *one* of the following topics:—(*a.*) The relation of the soil to health and disease; (*b.*) The influence of the geological formation on the scenery of a district.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Nutroa.

Nutroa bread and flour and Nutroa food are an entirely new, scientific, and practical departure in food-stuffs. They have been elaborated with the assistance of leading physiological and chemical experts, including Hofrath Professor Fresenius, of Wiesbaden.

Nutroa is purely vegetable. It is not only exceptionally digestible itself but it renders wheaten flour more digestible by admixture. The addition of one part of nutroa to ten parts of any ordinary flour is said to increase the nutritive value of the latter to the amount of 40 per cent. The mixture yields an ideal white flour from which an ideal white bread may be prepared. Nutroa is, we are given to understand, an emulsified vegetable fat in a stable form. No chemicals are incorporated with it or employed in its manufacture, so that it is suitable for infants and invalids. Consumptives, ricketty children, and patients recovering from acute exhausting illnesses are benefited by using this valuable food, which is prepared by the Nutroa Company, of 54 Chiswell-street, London, E.C.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

MAY 1, 1896.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XXIV.—*An Outbreak of Acute (Tropical?) Dysentery in a Family.*[a] By J. MAGEE FINNY, M.D. Univ. Dubl.; Past President, Royal College of Physicians; King's Professor, Practice of Medicine, in the School of Physic; Physician to Sir P. Dun's Hospital.

A FAMILY, consisting of seven persons, returned to their home on 10th September, 1889, in apparently perfect health, after spending the summer at the seaside in Bray, Co. Wicklow. The family consisted of a gentleman and his wife, his mother, aged seventy, and his four children, aged sixteen, fourteen, and thirteen years, and eleven months :—

CASE I.—On 11th September, Mrs. A., the old lady, was in good health, and spent the day in the Park. On 12th, two days after her return home, she had some diarrhœa, and for this she took the ordinary domestic remedies, but to no effect. The looseness was soon accompanied by pain in the lower part of the abdomen, and continued unabated through the night as well as the following day, and on 14th I saw her. I found her with a fairly clean tongue; the abdomen was not distended, but there was pain on pressure over the large bowel in the epigastrium and the left hypochondrium. As all the motions were passed in the adjoining closet, their nature

[a] Read before the Medical Section of the Royal Academy of Medicine in Ireland, on Friday, March 27, 1896.

could not be ascertained at first, but when seen in the chamber and night-chair on 15th, they were found to consist of red bloody mucus without a trace of fæces, or fæculent odour, while the quantity was not more than would fill an egg cup. Nearly every half-hour or twenty minutes the calls of the bowel were imperative; there was no straining or burning pain in the anus or rectum, and the moment the small ejecta were got rid of the patient was quite relieved till the next call. The pain across the abdomen immediately preceded the evacuation. A most notable diminution in the quantity of water passed called for comment, as the total for twelve hours did not exceed a wineglassful. Rectal examination and the introduction of the long tube gave negative results as to the presence of any intussusception, ulceration or growth, but the bowel was tender and felt rough to the touch above the sphincter. All enemata were returned unchanged.

From the day the bloody mucus and blood-stained fluid were discerned, every evacuation was seen by me, and in none from 16th to day of her death, on 25th, did a particle of fæces make its appearance; and castor oil, which was administered on three occasions, apparently never passed through. All the ordinary astringents—chalk, opium, catechu, failed to make the least impression on the number and frequency of the motions, or on their character, except that more blood-stained mucus and meat-stained water always followed the administration of oil. Three suppositories of morphin, 2 injections of laudanum, and 4 pills each of $\frac{1}{2}$ gr. ext. opii. aquos. in 24 hours, failed to stop the diarrhœa or to change its character. They only reduced the number of stools from three to four an hour to one or two in that time. Twenty grains of pulv. ipecac. led to vomiting and prostration, but had no effect on the bowels. Diet, either entirely liquid and animal for three days, or entirely milk, boiled and peptonised, mixed with carrara water, and thin arrowroot (as suggested by Dr. Gordon, who saw her with me on 20th) for a similar time made no difference. At the end of first week the patient showed signs of prostration, and these became more marked three days before death, as food in any form was not taken except in very small quantities. The pain, at first a most prominent symptom, was rarely complained of "so long as she lay quiet," and the abdomen underwent no external alteration; there was very little flatulence, and no tumour or swelling were detected, and no intestinal movements noticed.

The discharges varied a little in quantity at times, and in nature—(1) blood-stained water, (2) slimy red blood, (3) pink, raspberry-coloured clots, (4) small black clots, (5) shaggy shreds

of fleshy masses, half an inch long. At times when the ejecta seemed less blood-stained, perhaps the very next motion would be as red and scanty as at the beginning. The last three days and nights the motions were about 20 in 24 hours. Occasionally, though very rarely, 2 hours would elapse without one, and then again 5 or 6 would take place in an hour, and during the 36 hours preceding death, which occurred by exhaustion and failure of the circulation, on September 25th, 1889, the 15th day, the motions ran from the anus, as a thin liquid which stained the napkins a pinkish red colour, and was of a peculiarly nauseating odour, as of decomposing meat. There was very little hiccough and no vomiting.

Case II.—Mrs. B., aged thirty-seven, was nursing her child up to the day I first visited her mother-in-law (Case I.), on 14th September, 1889; that evening she had felt faint and weak. I made her wean the baby, at least during the night, and gave her a tonic mixture of iron, phosphoric acid and quinine for two days. On 16th she had diarrhœa, and the motions were reported to be dark. This at first seemed to be due to the medicine taken, but on 17th their characters were entirely dysenteric, eight to ten in an hour, accompanied and preceded by great pain across hypogastrium and up the left side of abdomen, while the voided matter consisted of small quantities of bloody slime and shreds of mucus.

From 17th to 23rd no fæculent matter passed, the characters of the stools being completely similar to those of the other persons attacked. On 23rd, two clay-coloured motions were passed with the greatest agony, and a sensation as if the whole inside were torn and dragged, and as if the womb had fallen down. Digital examination settled this point in the negative, and the probability was that the rectal and colonic ulcers caused the pain in the passage and expulsion of the soft fæculent masses. During the night another and larger mass passed, but without so much pain, while the bloody and mucous character was much less.

Improvement steadily progressed from this time, and in the 48 hours subsequently there were but six motions, with very much less pain in the bowels and abdomen, while the character of the discharges was more and more fæculent and contained less and less mucus and blood. The urinary secretion was more plentiful, and was passed by itself. On 27th September the patient was convalescent, though very weak and prostrate, and was put on a tonic of tinctura ferri pernitratis.

The course of this case was marked by moderate febrile disturb-

ance, the temperature ranging from 99° to 102°·5, and the pulse 92 to 112. The tongue was red and sore and often dry, but never brown or heavily furred. All through a very unpleasant taste was complained of. Thirst was very distressing for five or six days, while chilliness, and, later on, profuse sweating, marked the febrile character of the illness.

Case III.—An infant, aged eleven months; previous to this attack, healthy; was nursed at night by her mother, and by day took bread and milk. Was weaned on 15th, and as the upper incisors were pressing and there seemed much irritation in the gums, the latter were lanced on 16th. Restlessness and green stools were now present, but under Mellin's food and small doses of bismuth and pulv. cretæ arom. c̄ opio, there was general improvement on 17th and 18th, the child slept well, and the character of the motions changed to a natural yellow colour. On the 19th and 20th the child became very restless, and had several attacks of griping pains, after which it looked haggard and exhausted, while the extremities became cold. The motions, which were up to this date fairly copious, now became most scanty, and consisted of an eggspoonful of gummy material like unboiled white of egg or bloody mucus, and for the last 24 hours no water was passed. Nothing gave real relief. A warm sitz bath, chlorodyne in minim doses and the chalk and opium powder, were but slight palliatives; the paroxysms of internal pain, which caused the child to scream out at first, became more frequent, and the little patient sank, worn out and in a semi-convulsed state, on the morning of 22nd—the 3rd or 4th day of the dysentery. The old nurse, who for 30 years had attended infants from their birth, and who was accustomed to infantile diarrhœa during dentition and weaning, expressed astonishment at the features of the illness of the last three days, and the almost complete cessation of all true evacuations for the 48 hours before death. She had never met with a similar case.

There can be little doubt that the child became infected when just recovering from an attack of teething diarrhœa, and died of the exhaustion of pain and loss of sleep. The possibility of intussusception was borne in mind, but the absence of any tumour and of vomiting excluded it.

Case IV.—Mr. B., aged forty-nine, husband of Case II., complained of being attacked like his wife on 19th. He was constantly in the sick rooms of Cases I. and II., and had no time for rest or care of himself. His symptoms were—(*a*) frequent calls to relieve the

bowel—as many as ten or twelve in an hour, accompanied by pain across the stomach above pubes, (*b*) *oliguria*, a wineglassful being the total for 14 hours! (*c*) the motions of 24 hours altogether would not fill a small tea cup, (*d*) they consisted of a raspberry red fluid and glairy mucus, and all fæces were quite absent from them from 19th to 24th inclusive. There was an absence of constitutional disturbance beyond a great and insatiable thirst, a clammy nasty taste on the tongue, although that organ was clean and moist all through. The pulse range was generally between 80 and 90, and there was no fever. Owing to his anxiety about his wife and child he took little or no rest until after the child's death on the 22nd, when he was induced to rest on a sofa by day.

The treatment at first was 20 gr. dose of pulv. ipecac. given in a little syrup of orange. This, however, caused intense sickness, and during the vomiting some small-formed motions passed from the bowels. In eight hours subsequently 8 grs. more were taken, but no marked change took place in the dejecta or the number of calls. He was then ordered a pill of gr. v. pulv. ipecac. co. every 4th hour, but this was not taken with any regularity up to the 22nd. The urgency and frequency of the calls were diminished; occasionally 2 hours would pass without a motion, and then again 5 or 6 would occur in the space of half an hour. Sleep at night on 23rd and 24th was secured by an enema of 30 minims of laudanum. On the 25th, the thirst had greatly abated, and the motions (reduced in number to 3 in 12 hours) were slightly fæculent and less bloody or mucous, while the kidneys were acting better, 10 oz. being passed in the night. September 27th, solid fæces were passed in the morning after the first night of quiet natural sleep he had had since taken ill. Their passage caused a good deal of pain in the rectum, but they were unaccompanied by mucus or blood. The kidneys acted freely. The patient was now convalescent and allowed a small quantity of animal food, such as a beaten-up egg.

Case V.—Master W., aged twelve, who, with his brother, had been sent out of the house on 19th, when his mother and father became ill, returned on 22nd, having had "diarrhœa" on the night of 21st. Examination of the stools revealed the same state of things as in the case of all the rest—viz., no fæces and but teaspoonfuls of blood, bloody mucus or red brown slime. The course was similar, viz:—at first every few minutes he had to go to the night-chair, and so urgently that often he failed to reach it in time. Partial suppression of urine. Some febrile disturbance. Temperature, 100° to 101°·2. Pulse, 100 to 110. Forehead hot and cheeks

flushed; great thirst; tendency to vomit, some abdominal pain, but no tympany or tumefaction of the belly. On the 24th and 25th he slept almost incessantly, and was moved but three times in the night. On the 27th he had 2 teaspoonfuls of castor oil and 1 of glycerine, and in four hours he passed a good motion of formed fæces, free from blood and mucus.

It is to be noted that for seven days no fæculent discharges passed from the bowels. He was allowed up. The treatment consisted in a milk diet, with bread and rice and arrowroot, and an astringent mixture containing salicylate of sodium, glyc. of carbolic acid, chalk and opium. His illness was milder as regards the pain and amount of bloody mucous dejecta than that of the other members attacked, and the fire of the disease seemed to burn itself out after the first four days, so that much less medicine was requisite, and his recovery was more prompt and perfect.

TABLE.

	Age	Onset	Termination	Duration	Result
Case I.	70	Sept. 12th	Sept. 25th	14 days	Death
Case II.	37	Sept. 14th	Sept. 27th	14 days	Recovery
Case III.	11 mo.	Sept. 19th	Sept. 22nd	4 days	Death
Case IV.	48	Sept. 19th	Sept. 27th	9 days	Recovery
Case V.	12	Sept. 21st	Sept. 27th	7 days	Recovery

Remarks.—The clinical features of the above cases showed a remarkable family resemblance, and each may be taken as a true type of the others, having regard to the age of the patient and the severity of the attack. These features were—(1) the abdominal pain, (2) the frequency of the action of the bowels, (3) the small quantity of the total discharges in 24 houses, (4) the mucus and blood of which the motions consisted, (5) the complete occlusion of the bowels to the passage of fæces of any kind, (6) the prostration and debility without fever or very much general constitutional disturbance, and (7) the oliguria and temporary anuria. To these may be added the sudden onset of the attack in each individual without any premonitory diarrhœa—a feature true of all the cases, not even excepting the baby,

who had had the green stools of catarrhal enteritis, so common to patients of that age, at the time of teething and of being weaned, and whose stools were becoming natural milk-cure motions the day before it was attacked with dysentery.

Case I.—the first attacked—was said to have been suffering from diarrhœa before I was consulted, but it is more than doubtful if this were the case, as the subsequent course of events warranted one to believe the frequency of the calls to go to the closet was mistaken for loose fæculent evacuations. A symptom of acute dysentery, which is usually one of the most pronounced and constant and most characteristic (Woodward), was remarkable for its almost complete absence in this series of cases—and this was "tenesmus." This is variously described as "straining at stool," "a burning feeling in the lower bowel," "a feeling that something more has to be voided"—so that the patient may sit on the closet for half an hour at a time. Possibly the comparative mildness of the attack may explain its absence, but it may also be referable to the inflammatory changes being in the large bowel rather above than in the rectum.

The absence of all fæces from the motions from the hour of the invasion of the disease, which was particularly defined in the case of Mr. B. and his son, is, I consider, the most remarkable of the features of this group of cases—as in any cases of dysentery which I had previously seen, either fluid fæcal matter or scybalous masses were occasionally voided as well as the mucus. I see, however, that Hilton Fagge states that the most careful recent observers are agreed that fæcal matter is comparatively seldom seen. Thus the paradoxical expression of Stoll is justified, when he described dysentery in the terms *morbus alvum occludens*.

The treatment adopted was dietetic and medicinal—milk, and milky foods with thin arrowroot, formed the basis of the diet, while counter-irritation to the abdomen by rubefacient epithems, opiate injections, and astringent medicines, formed the line of medicinal treatment. Ipecacuanha was given in 20 gr. doses to two out of the five, but it produced such vomiting and depression that it was not pressed, and I cannot say, therefore, whether good might have been expected

of it. I think I might have been more successful in its administration had I given it in pills, or, as now made, in compressed tabloids, and not in syr. aurant., as suggested by H. Fagge.

The last point of interest—but by no means the least—was the question of the ætiology of the outbreak, whereby five out of seven members of a family were attacked.

I regret to say I cannot satisfy myself on this point. The whole family had just returned from Bray, seemingly in the best of health. The dwelling-house was part of a business warehouse, and was occupied by several clerks, and three or four domestics, and yet the strictest inquiry failed to trace any illness of any kind, either before, during, or subsequent to this endemic outbreak. I made inquiry of the Registrars of deaths of the district, and they told me that there were no other deaths from dysentery recorded during September except the two which I had registered, and there was no epidemic of diarrhœa at the time. In 1886 and 1887 an endemic outbreak took place in the Richmond Lunatic Asylum, which was recorded in the Transactions of the Royal Academy in 1888, Vol. VI., by Dr. Conolly Norman, who attributed it to the insanitary condition of the soil and the drainage, but it died out before 1889. The only clue at all discoverable was that a friend in the neighbourhood, who had a cow, supplied the family with milk for the two days preceding my being called in, and that soon after Case I. was laid up, the child of this neighbour died of intestinal disease. Then a query arises. Did all the five cases contract the disease from the milk, or was it not by *contagium* in Cases III., IV., and V? I think it was so. My cases do not add to our knowledge as to treatment very much, but the ipecacuanha did not seem a specific in the two cases I employed it. Without any intention to make little of the treatment of acute dysentery by ipecacuanha—a treatment which has in India and elsewhere acted as a specific antidote, and which I found immediately curative in a case published in the *Hospital Gazette*, 1868—it may be of some interest to note the most recent therapeutic hints which I have come across in the management of this disease.

Mr. William Arthur Dickson, F.R.C.S.I., Government

Medical Officer, British Guiana Medical Service, supplies to the *B. G. M. Annual*, pp. 28–29, a note of 183 consecutive cases of dysentery without a death treated at the Plantation Albion Hospital in 1893. The ages ranged from five months old to fifty-six, the greatest number—159—being between twenty and forty. The disease under treatment lasted 7 days in 97 and 14 days in 52.

The treatment consisted of castor-oil and chlorodyne for griping, and then the ordinary astringents—catechu, kino, opium, and mist. cretæ, every fourth hour, and in two days, if not markedly improved, pil. plumb. c. op. B. P. every third hour was substituted.

"After giving the ipecacuanha treatment several trials," he writes, "I have finally abandoned it as useless."

The diet he adopted was the same I found useful—viz., milk with bread softened in it, sago and arrowroot; afterwards rice boiled in milk was given.

As the object of my paper is simply to record the clinical history of an unusual and isolated outbreak of acute dysentery, I shall not load it with surmises as to whether *Amœba coli* of Lösch was present or not, as the infecting micro-organism, and whether, therefore, the type of the disease justified the application of "amœbic dysentery," or true tropical dysentery (Osler, Councilman, and Lafleur). A *post-mortem* examination of the large bowel could alone have settled this question, and that was not possible under the circumstances.

ART. XXV.—*First Principles in Small Matters of Preventive Medicine.*[a] By WALTER BERNARD, F.R.C.P.I.; Consulting Physician to the Hospital for Contagious Diseases, Londonderry.

WE who can so fully realise that State Medicine rests on a foundation of first principles and prevention, cannot but deplore that its ascertained hygienic rules have not obtained more special recognition from administrators, legislators, and municipal bodies in ordinary communities—

[a] Read before the Section of State Medicine of the Royal Academy of Medicine in Ireland, April 17, 1896.

communities which frequently hinder rather than aid social progress.

On so important a subject, which concerns the health of millions in human habitations, this Section will, I am sure, pardon me for intruding on their patience for a few minutes in regard to the minor details of prevention, which can be easily carried out in the homes of the people.

Amid the shifting scenes of the family physician's daily life, while he is unrolling the panorama of human miseries and sufferings, the conviction is daily gaining more and more ground that he possesses the greatest facilities for the application of principles in domestic hygiene—facilities which enable him to get at the antecedents, and the causes calculated to destroy health, embitter life, and, on the whole, rob the nation of that which ought to belong to it. When the family doctor possesses the courage of his convictions in sanitary domestic measures, and is not afraid of the landlord or tenant, he cannot be too highly appreciated by the public; and though he may smart and wince for being independent, yet he will soon rise above the level of all that is acrid, unjust, and selfish.

If we have the courage of our convictions how frequently we must deprecate, to the minor insurance agents and to the people, the subterfuge and intrigue practised by their burial societies. Medical men are frequently asked to certify that an illness had lasted for a short period, when it was well known that the deceased had been ill for two or three years previously. Who is to blame? Certainly the State. Here Shakespeare analyses our Christian example: The deception "you teach me I will execute, and it shall go hard but I will better the instruction."

As we go on we are learning, year by year, more of what lies before us. During our daily visits we are not too busy to spend a few minutes on controlling influences. A mutual good understanding will, without giving rise to anything calculated to cause offence, enable us to inculcate and exercise hygienic influences on the minds of men, women, and children. And we give proof to the household, while we thus uphold preventive rules, that we are

dealing only with life regulated by laws calculated to remove from the family all the removable causes of contagion, or other factors which bring death to one or more of its members. In this way we are continually afforded opportunities of inculcating in the minds of a law-abiding people that it is the duty of every individual not only to protect himself and family, but to assist in investigating and staying the spread of contagion. The absence of the extension of sanitary scientific knowledge, the crime of concealment, and careless indifference, have permitted scarlet fever to spread over Londonderry and its neighbourhood. Some of the children were allowed to play on the streets during the process of desquamation, and some of their near relations did not use means to free themselves from contagion before going into crowded assemblies and railway carriages. These facts, among many others, go to show that notification is not fully enforced.

It is a matter of every-day experience that if isolation and disinfection be faithfully and energetically carried out, the further spread of contagion can, as a rule, be put a stop to. This is a most important fact for both employers and employed, and is well worth attention. For, if our efforts be successful, and isolation be effectively carried out, not only do we save life, and frequently protect the young from the sequels of such diseases, but we can even allow the bread-winners to attend their work.

Under the boarding-out system in Gwyn's and Young's Trust, I have succeeded, with one room only at my disposal, in checking the spread of the epidemic to other members of the family and to lodgers. I exhibit models and illustrate apparatus I employ. Articles can be rendered aseptic by heat and antiseptics before leaving the sick room. One is adapted for overalls worn by those entering and leaving the apartment, and is specially contrived for the doctors' and nurses' caps and gowns. But unless the medical man himself reminds the persons in immediate attendance on the sick of all that has to be rendered aseptic, such as the anointing of the body and the scalp, as well as the burning of hair, nail clippings, old neckties, slippers, tooth-brushes, our efforts will be probably

unsuccessful. If we succeed, we keep the contagion from our own children as well as from those of our patients, despite the damp basements and the paved or unpaved yards. Should our efforts be unavailable, we shall have the satisfaction of knowing that no act or any neglect of ours omitted to shut the gates against that which brought calamity to the household.

Local prejudices and the love of money and power still stand much in the way of social progress in Londonderry. However, against these hindrances we can show excellent results, and what has added much to our success is that, at the suggestion of your Health Society, I was enabled to establish a branch in our city, and the Duchess of Abercorn graciously consented to become President of it. Our progress has been exceptionally good, and, in a great degree, is due to our Secretary, Mrs. Reed, of Duncreggan, whose untiring energy, keen insight, and social influence have not only gained excellent audiences for the lady lecturers, but have enabled us to extend our boundaries to Coleraine, Ballymoney, and Strabane.

There is another important step to be taken yet. The local authorities, who are compelled to find proper food and lodging for the "psychological" tramp, are not compelled to look after the housing of the honest working man. Some of the city refuse is disposed of on the catchment area of our water-supply, and some on polluted subsoil for elevation. On this houses are being continually built without concrete foundations. In the low-lying level, the families who live in properly-constructed houses, with concrete foundations (plans of which I beg to submit for your inspection), have better health than their neighbours who do not enjoy the same privileges.

As the health of the community is of more importance to the nation than fleets of ironclads, and sanitary work is spreading throughout Ireland, an International Congress of Hygiene held in Dublin would tend to awaken the public and the authorities to the vital necessity that exists for more effective measures, without which the United Kingdom can never hope to continue to be the greatest power among the nations of the earth.

Another branch which concerns the general health is one in relation to which the general practitioner cannot be accused of over-plainness of speech, as it is a delicate subject for him to touch upon. But the personal and family history of three generations, the more accurate diagnosis, and successful methods of treatment—all tend to show that we cannot go on closing our eyes to this great evil of wide-spread specific disease. The innocent suffer because the State will not interfere. From the knowledge of human life acquired from the different phases of character during many years of practice, I am convinced that the general medical practitioner has more influence and knowledge in the physiological moulding of defective infantile life, than the hospital physicians, clinical teachers, or officials. Of necessity, his daily work among this class is more wide-spread, and brings him constantly in touch with the infant as well as the mother.

My long experience has impressed me so much with these facts of national concern, deduced from positive reiterated evidence, that I have frequently advocated my views from time to time. Were the State to recognise and realise more fully the practitioner's *locus standi*, and thus co-operate with him in his efforts, his authority in the homes would be more felt when supplemented with the stamp of State measures.

I see by the *Lancet* that a Society was formed a few months ago for instructing parents and teachers how to deal with the defective. But no allusion is made to the family doctor, whose calling brings him into immediate contact with child-life long before the scholastic teaching is reached.

ART. XXVI.—*Position of a Needle defined by the Röntgen Rays in the Palm of the Hand; its Removal, and complete Recovery of the Patient.* By R. BOLTON M'CAUSLAND, M.D. Univ. Dubl.; F.R.C.S.I.; Senior Mod., Trin. Coll., Dubl.; Surgeon to Steevens' Hospital.

So much has been written and such wonderful stories have been told in the daily papers, about Professor Röntgen's discovery of the new X Rays, and the so-called "New

Photography," that I think a short account of a case in which the "New Photography" has proved to be of the greatest service, may be of interest and of some use to members of the profession in Ireland. Although cases from abroad and in England are reported in the journals, my case is the first successful one (as far as I know) which has been operated on in Ireland. The history is shortly as follows:—

J. E., aged thirty-five, a parlourmaid, when dusting a press, some two years and a-half ago, felt a needle run into her hand; the sharp end had broken off, and the eye end had run into the muscles of the hypothenar eminence. Under cocaïn, I enlarged the small puncture wound and tried to find the fragment, but failed to see or feel any trace of it. I poulticed and fomented the hand, in the hope that the needle would come out through the enlarged wound, but it did not. The wound healed quickly, leaving no scar, and the woman complained only of "shooting pains" up the arm, and into the little and ring fingers, and at times "cramps" and "spasms" in the muscles of the hand and arm, causing her to "cry out" and drop anything she was holding. For about the past twelve months these "spasms" and "cramps" had occurred less frequently, maybe once or twice a month, until recently, when they became more frequent. The pain latterly was referred to the base of the fingers proper on the palmar surface, or to the wrist proper (also palmar surface) or up the arm, but *never* to where the "Skiagram" pointed out the needle to be situated, and where it was accordingly found at the operation. On March 16th, 1896, Professor Barrett, assisted by Mr. Jefcote, at the Royal College of Science, kindly took two "Skiagrams" or "Shadowgraphs" of the woman's hand for me, the second one of which most clearly demonstrated the exact position of the needle (copies of "Shadowgraphs" enclosed) where it lay, deep down on the palmar side of the metacarpal bones. When the position of the needle was thus clearly seen, the woman was anxious for its removal, and on March 23rd I operated at Steevens' Hospital. I made an incision a little over an inch long, parallel to the little finger metacarpal bone, and going under the muscles of the little finger, using a blunt knife carefully, with the finger in the wound, I felt the needle in the exact place shown in the "Shadowgraph," and easily extracted it. The wound was dressed before the Esmarch's bandage was removed; five silkworm gut stitches were used, which were removed on the third day, when the wound was found dry and healed. The woman has now perfect

feeling and full use of all the muscles of the hand and arm, and has left hospital.

I was assisted by my colleague, Mr. Swan; and Mr. Hamilton and Mr. Bennett (Consulting Surgeon to the Hospital) were also present. Dr. Hamilton gave the anæsthetic, and Messrs. Burke and Pierce-Smith (my dressers) also assisted.

ART. XXVII.—*Note on Parknasilla as a Health-Resort.*[a]

By D. EDGAR FLINN, D.P.H., F.R.C.S.I., M.R.C.P.I.; Examiner in State Medicine, Royal Colleges of Physicians' and Surgeons' Conjoint Board; Examiner in Hygiene, Royal College of Surgeons' and Apothecaries' Hall Conjoint Board; Ex-President, State Medicine Section, Royal Academy of Medicine in Ireland.

THERE are few wants more sensibly felt in this country than that of a suitable health-resort to which, without leaving their own country, persons suffering from chronic forms of disease, or convalescing from some acute form of illness, may have recourse without undue expense or need of long travel; and my object in this short communication to this Section is to draw attention to a hitherto comparatively unfrequented district in the South-west of Ireland which has been lavishly endowed by nature, and possessing most of those advantages which make a health-resort salubrious and attractive.

Where is Parknasilla? is a question that will naturally arise in the form of inquiry by many. Parknasilla is situated on the northern shore of Kenmare Bay—a bay rich in beauty, and with singularly indented coast lines. Its well-sheltered position amidst a number of islets, thickly wooded down to the water's edge, has endowed it with unique advantages. This protective area gives to Parknasilla claims of a special character, and prevents the access to it of all winds except those coming from the warmer points—viz., South, and South-west, these winds before reaching the southern coast of Ireland having travelled over the Gulf Stream, and being thus subjected to its moderating and balmy influence.

We all recognise what elevation of the land will do for any

[a] Read before the Section of State Medicine of the Royal Academy of Medicine in Ireland, April 17, 1896.

place, particularly if it shelters that place from winds blowing from the cold quarters. Thus mountain protection is of supreme importance in the choice of a health-resort, more especially in the winter and spring seasons of the year. In this regard Parknasilla is exceptionally favoured, a mountainous range closely guarding and protecting it from the northerly and easterly winds. The combination of mountain, wood, and water, gives a special charm to this locality; and a convincing evidence of the mildness of the winter and early spring here is the forward character of the vegetation, the early budding of the trees, shrubs, and flowers—all bearing testimony to the mildness of the climate. Temperature rapidly tells its tale on the vegetable world, and there can be no more reassuring proof of the equable and balmy character of the climate of a district than the early growth of flowering shrubs, plants, and table produce.

The position of this favored and sheltered sea inlet upon the isothermal map shows it to have a mean annual temperature of 52°, being similar in this regard to its neighbour, Glengarriff, and registering a higher mean annual temperature than Ventnor or Torquay. The mildness of the climate in the earlier spring months is of such a character that exercise can be freely partaken of in the open air daily, without risk of chill, and this to the invalid is of paramount importance. No record has, as yet, been regularly taken of the daily sunshine, or of the rainfall, but so far as could be ascertained, the rainfall does not appear to be excessive. To sufferers from chronic or recurrent affections of the respiratory organs, Parknasilla in the winter and early spring months would appear to be indicated as a most desirable place of residence. I have had the advantage of two recent visits to this district, and feel convinced that when it becomes better known, Parknasilla will prove a veritable haven of health and rest to the chronic invalid and the convalescent, as well as a delightful retreat to the busy man of the "world's mart," who may need a temporary repose from the worries and cares of daily life. Parknasilla is about a two-hours' drive or thereabouts from Kenmare, the drive being one of exceptional beauty and interest.

The number of health-seekers and invalids who annually leave our shores is very large, and the amount of capital that is thus lost to the home health-resorts is very considerable.

Here at our very threshold we have several health-resorts—notably, Glengarriff, Parknasilla, and Rostrevor, which from a climatic point of view, afford special advantages to the invalid world at the more critical seasons of the year, and they are justly entitled to our warmest consideration and support.

ART. XXVIII.—*The Medicine and Surgery of the Homeric Poems.* By JOHN KNOTT, M.A., M.D., Ch.B., and Dip. Stat. Med. (Univ. Dubl.); M.R.C.P.I.; M.R.I.A.; Fellow of the Royal Academy of Medicine in Ireland; Fellow and Examiner (Conj. Sch. with Apothecaries' Hall), Royal College of Surgeons in Ireland, &c.

(*Continued from page 228.*)

THE process of anointing the bodies of the dead has been a very ancient and widely-spread one, especially in the tropical regions. It has evidently owed its popularity to its deodorising effects. The ἔλαιον, employed for the purpose by Homer would appear to correspond to "*oil*," not "*ointment*"; and Pliny informs us that: "Unguentum Persarum genti se debet. . . . Primum, quod equidem inveniam, castris Darii regis expugnatis, in reliquo ejus apparatu Alexander cepit scrinium unguentorum. Postea voluptas ejus a nostris quoque inter laudatissima atque etiam honestissima vitæ bona admissa est: honosque et ad defunctos pertinere cepit." This cannot, however, be reconciled with the opinion of Athenæus, who asserts that Homer's ἔλαιον was synonymous with μύρον—ointment, properly so called—and the statement of Plutarch, that Solon's legislation allowed the use of ointment to citizens, but forbade it to slaves. From these various items of evidence it would appear that, although there were some new and costly ointments introduced to Greece from Persia, the use of certain simpler ones must have been familiar to the Greeks for centuries before the time of Alexander. The great value of the Oriental μύρον is well shown in the Gospel narrative by the gifts of the "wise men" who came from the East to Bethlehem, with "gold, and frankincense, and *myrrh*."

The process of anointing was also known to and practised by the ancient Egyptians. The embalmers were known to

the Romans as *Pollinctores*, as well as those who performed the office of washing and anointing the bodies of their own dead. The evil repute into which the members of this profession fell in Egypt is but too forcibly illustrated by the loathsome hypothesis of the origin of syphilis from this source as a result of their indulgence in what the learned author of the *Religio Medici* has called their "prodigious carnality."

After the washing and anointing, the body was wrapped in its shroud, which does not appear to have differed from the *pallium* or cloak ordinarily worn. Over this was put a richer garment, which, in the case of the noble and wealthy, was of great splendour. We are told by Diogenes Laertius that before Socrates took the fatal draught Apollodorus brought him a cloak, with a garment of great price; as it was the desire of the great philosopher to prepare himself for his funeral before his death. The colour of the inner garment appears to have been (preferably) white:—

> Ἐν λεχέεσσι δὲ θέντες, ἑανῷ λιτὶ κάλυψαν
> Ἐς πόδας ἐκ κεφαλῆς· καθύπερθε δὲ, φάρεϊ λευκῷ.
>
> —*Iliad*, XVIII., 352–3.

When the body was duly laid out and dressed, it, and the bier on which it was laid, were respectfully adorned with *wreaths of flowers* and green *foliage*:—

> —— πέπλοισιν ὡς περιστέιλῃς νεκρὸν,
> Στεφάνοις θ', ὅση σοι δύναμις ὡς ἔχει τὰ σά.
>
> *Euripides, Troad.* 1143.

The *feet* were always turned *towards the door*—of the tent in an encampment, as in the case of Patroclus:—

> —— ἐνὶ κλισίῃ δεδαϊγμένος ὀξέϊ χαλκῷ
> Κεῖται, ἀνὰ πρόθυρον τετραμμένος.
>
> *Iliad*, XIX., 211.

And the reference of Persius indicates the Roman mimicry—of this, as of other Grecian ceremonies:—

> —— tandemque beatulus alto
> Compositus lecto, crassisque lutatus amomis
> In portam rigidos calces extendit.
>
> —*Sat.* III., 103.

Some time before the funeral procession started, the mouth of the corpse was furnished with an *Obolus*, the fare claimed by Charon for safely wafting the departed soul to the other side of the Styx. Scoffers at the national religion some-

times suggested that the addition of a supererogatory obolus would make the passage more rapid and smooth: Aristophanes makes his Bacchus say in this connection:—

Φεῦ, ὡς μέγα δύνασθον πανταχοῦ δύ' ὀβολώ.

And with a small and dainty *cake* (μελιττοῦτα), composed of flour, honey, spices, &c. This was designed to function as the sop to Cerberus, which was necessary to procure a safe and easy entrance to the place of the judgment-seat. Thus Lysistratus:—

—— σορὸν ὠνήσει,
Μελιττοῦταν ἐγὼ καὶ δὴ μάξω.

And in the comparatively lengthy account of the custom and its explanation by Virgil:—

Cerberus hæc ingens latratu regna trifauci
Personat, adverso recubans immanis in antro:
Cui vates, horrere videns jam colla colubris,
Melle soporatam et medicatis frugibus offam
Objicit; ille, fame rabida tria guttura pandens,
Corripit objectam, atque immania terga resolvit
Fusus humi, totoque ingens extenditur antro.
Occupat Æneas aditum, custode sepulto,
Evaditque celer ripam irremeabilis undæ.

Æn. Lib. VI., 417-425.

The length of time which was allowed to elapse between death and cremation, or interment, does not appear to have been at all definitely limited, at any period, among either the Greeks or Romans. It would only seem that it was prolonged in proportion to the importance of the deceased person. The body of Achilles was committed to the flames after seventeen days and seventeen nights of continuous mourning:—

Ἑπτὰ δὲ καὶ δέκα μέν σε δμῶς νύκτας τε καὶ ἦμαρ
Κλαίομεν, ἀθάνατοί τε θεοὶ θνητοί τ' ἄνθρωποι·
Ὀκτωκαιδεκάτῃ δ' ἔδομεν πυρί.

Odyssey, XXIV., 63.

Servius tells us (in his comment on Æneid V., 65) that the dead body lay for seven days in the house, was burned on the eighth day after death, and that the relics were buried on the ninth; but this rule can certainly have applied to the obsequies only of the great. The author of the *Argonautica* refers to a fourth-day ceremony:—

At vero ornantes supremo funus honore;
Tres totos condunt lugubri murmure soles,
Magnifice tumulant quarto.

The bodies of the poor—including the philosophers of that condition—were often finally disposed of on the day after death. Diogenes Laertius has preserved an epistle of Pherecydes, the tutor of Pythagoras, who is usually credited with the elaboration of the doctrines of *metempsychosis* and of the *immortality of the soul*, which were afterwards so widely disseminated by the teachings of his illustrious disciple, and by his followers in their turn. This document is addressed to Thales, announcing that the writer was about to breathe his last, and contains an invitation to his friend to attend his funeral obsequies on the following day. And in an epigram of Callimachus a similar practice is referred to :—

> Δαίμονα τίς δ' εὖ οἶδε τὸν αὔριον ; ἡνίκα καί σε,
> Χάρμι, τὸν ὀφθαλμοῖς χθιζὸν ἐν ἡμετέροις,
> Τῇ ἑτέρῃ κλαύσαντες ἐθάπτομεν.

The funeral ceremonies were performed in the day—not only in the Homeric age, but in the Grecian States afterwards—except in the case of Athens, in which, contrary in practice as usual to the other commonwealths of the peninsula, a law of Solon enjoined the celebration of all such rites before sunrise. Young men only, who had died in the flower of their age, were, in the other States, buried during the morning twilight. Such deaths were considered so calamitous that it was looked upon as indecent—almost impious—to celebrate the rites connected with them in the face of the sun. For other funerals, night was looked upon as an improper time. Euripides makes one of the warnings of Cassandra to refer to this :—

> Ἢ κακὸς κακῶς ταφήσει νυκτός, οὐκ ἐν ἡμέρᾳ.
>
> —*Troad.* 446.

Plato informs us that, in the primitive days of the Grecian States, the inhabitants were interred in special repositories provided for that purpose, within the walls of their own dwellinghouses. The Thebans had once a law that every citizen who built a house should prepare a receptacle for his dead within its precincts. This custom appears to have continued till, with the increase of population, the cities had attained to some considerable size, when public cemeteries began to be used. Later still, as the cemeteries became

overcrowded within the city, and the astute Greeks began to notice the undesirability of having the remains of so many dead bodies lying so near the habitations of the living, it became customary to bury outside the city walls, and usually close by the highways. As both cremation and interment were used, it has been supposed that, in addition to the removal of so much offensive matter from their midst by the practice of extra-mural burial, there operated the additional necessity for obviating the danger of conflagrations from the practice of burning the bodies of the dead. The laws of Lycurgus—contrary, as in so many other particulars, to those of the other Grecian law-givers—permitted the burial of the dead within the city walls to be continued.

The graves of the aboriginal inhabitants of Greece appear to have had some resemblance to those of Abraham and his immediate descendants; they were merely caverns rudely hollowed in the earth (*ὑπόγαια*). As architectural skill gradually developed, those receptacles of the dead underwent decoration. They were neatly paved with stone, and gracefully arched; and received such artistic care as might be expected from a gifted and emotional people, inspired by the reverence for departed relatives which is hardly ever absent from a human breast endowed with any noble or elevated sentiments. Some of those vaults were even furnished and decorated with no less art and care than were the dwellings of the surviving relatives of their occupants. Accordingly, a devoted mourner sometimes retired for days and nights together to one of those places; of which practice a well-known instance has been given by Petronius Arbiter in his story of the *Ephesian Matron*.

And somewhat similar was the development of the funeral pyre, from the crude collection of faggots, which must have necessarily formed it in the earlier ages, to the gigantic and elaborate structure which Homer assigns to Patroclus, and the still more highly-finished one which Virgil has constructed for the combustion of Misenus.

When the body was placed on the pile, the eyes were opened by the same hand which had closed them after death, so that the deceased might seem to look up to heaven; and the rings were replaced on the fingers which had borne them. This

latter custom may be gathered from the description given by Propertius of the ghost of his mistress in the habit in which she had been burned:—

> Et solitam digito beryllon adederat ignis.
>
> *Lib.* IV, *El.* 7.

The hand of the same nearest relative was also privileged to apply the torch to the pile. This was done with the face averted. It was considered a great blessing to be rapidly reduced to ashes; and, on this account, the winds were invoked for their assistance:—

> Οὐδὲ πυρὴ Πατρόκλου ἐκαίετο τεθνειῶτος,
> Ἔνθ' αὖτ' ἄλλ' ἐνόησε ποδάρκης δῖος Ἀχιλλεὺς,
> Στὰς ἀπάνευθε πυρῆς, δοιοῖς' ἦρατ' ἀνέμοισι,
> Βορέῃ καὶ Ζεφύρῳ, καὶ ὑπέσχετο ἱερὰ καλὰ.
> Πολλὰ δὲ καὶ σπένδων χρυσέῳ δέπαϊ, λιτάνευεν
> Ἐλθέμεν, ὄφρα τάχιστα πυρὶ φλεγεθοίατο νεκρὸν,
> Ὕλη τε σεύαιτο καήμεναι.
>
> —*Iliad* XXIII. 192-8.

> Nor yet the Pile where dead Patroclus lies,
> Smokes, nor as yet the sullen Flames arise;
> But fast beside Achilles stood in Pray'r,
> Invok'd the Gods whose Spirit moves the Air,
> And Victims promis'd, and Libations cast,
> To gentle Zephyr and the Boreal Blast:
> He call'd the Aerial Powers, along the Skies
> To breathe, and whisper to the Fires to rise.
>
> —*Pope.*

It is easy to understand how unpleasant a result the imperfect combustion of the body would have been; and, accordingly, we are told that the trees which were usually employed for the structure of the funeral pyre were "such as had most pitch or rosin in them." When bodies had to be burned together in numbers, as happened in times of war or pestilence, we are informed that they were so disposed on the pile that those of moist and easily inflammable constitutions alternated with those of the contrary temperament; and that *one female* body was placed among those of *ten males*.

To secure the more rapid combustion, the body was in some cases covered with fat. This was done by Achilles in the case of his beloved Patroclus; the splendid description

of whose funeral pyre is well worthy of detailed examination :—

Ποίησαν δὲ πυρὴν ἑκατόμπεδον ἔνθα καὶ ἔνθα,
Ἐν δὲ πυρῇ ὑπάτῃ νεκρὸν θέσαν, ἀχνύμενοι κῆρ.
Πολλὰ δὲ ἴφια μῆλα καὶ εἰλίποδας ἕλικας βοῦς,
Πρόσθε πυρῆς ἔδερόν τε καὶ ἄμφεπον· ἐκ δ' ἄρα πάντων
Δημὸν ἑλὼν ἐκάλυψε νέκυν μεγάθυμος Ἀχιλλεὺς
Ἐς πόδας ἐκ κεφαλῆς, περὶ δὲ δρατὰ σώματα νήει·
Ἐν δὲ τίθει μέλιτος καὶ ἀλείφατος ἀμφιφορῆας,
Πρὸς λέχεα κλίνων· πίσυρας δ' ἐριαύχενας ἵππους
Ἐσσυμένως ἐνέβαλλε πυρῇ, μεγάλα στεναχίξων.
Ἐννέα τῷ γε ἄνακτι τραπεζῆες κύνες ἦσαν
Καὶ μὲν τῶν ἐνέβαλλε πυρῇ δύο δειροτομήσας,
Δώδεκα δὲ Τρώων μεγαθύμων υἱέας ἐσθλοὺς
Χαλκῷ δηιόων·

—*Iliad* XXIII. 164–176.

[While those deputed to inter the Slain]
Heap with a rising Pyramid the Plain.
A hundred Foot in length, a hundred wide,
The growing Structure spreads on ev'ry Side;
High on the top the manly Corse they lay,
And well-fed Sheep, and sable Oxen slay:
Achilles cover'd with their Fat the Dead,
And the pil'd Victims round the Body spread.
Then Jars of Honey, and of fragrant Oil
Suspends around, low-bending o'er the Pile.
Four sprightly Coursers, with a deadly groan
Pour forth their Lives, and on the Pyre are thrown.
Of nine large Dogs, domestick at his Board,
Fall two, selected to attend their Lord.
Then last of all, and horrible to tell,
Sad Sacrifice! twelve Trojan Captives fell.

—*Pope.*

And the still more artistic picture given by Virgil :—

Nec minus interea Misenum in litore Teucri
Flebant, et cineri ingrato suprema ferebant.
Principio pinguem tædis et robore secto
Ingentem struxere pyram, cui frondibus atris
Intexunt latera, et ferales ante cupressos
Constituunt, decorantque super fulgentibus armis.
Pars calidos latices, et aëna undantia flammis,
Expediunt; corpusque lavant frigentis, et unguunt.
Fit gemitus: tum membra toro defleta reponunt,
Purpureasque super vestes, velamina nota,
Conjiciunt. Pars ingenti subiere feretro—
(Triste ministerium)—et subjectam more parentum
Aversi tenuere facem. Congesta cremantur
Thurea dona, dapes, fuso crateres olivo.
Postquam collapsi cineres, et flamma quievit,
Reliquias vino et bibulam lavêre favillam;

Ossaque lecta cado texit Corynæus aëno.
Idem ter socios purâ circumtulit undâ,
Spargens rore levi, et ramo felicis olivæ;
Lustravitque viros, dixitque novissima verba.
—*Æneid.* VI., 212–231.

Which is, perhaps, more appropriately Englished by the quaint old diction of Phaer's paraphrase than by the more polished and familiar one of Dryden :—

The Troians all in solemne guise
Did wail Misenus' corps, and gave to him their last outcries,
First cut in culpons great, and fat of sappe, with pitch among,
A stately pile they build, with timber trees and cypresse strong,
(That dead men's treasure is) his gorgeous armes also they set;
Some brought the water warme, and cauldrons boyling out they fet.
The body cold they wash, and precious ointments on they poure;
Lamenting loud is made, then close his limbes in bed, or floore,
They crouch with weeping teares, and purple weedes on him they throw:
His robes, his harneis bright, and ensignes all, that men may know.
In mourning sort some heaue on shoulders high the mighty beere,
(A doleful service sad) as children doe their father deere,
Behinde them holding brands, then flame vprising broad doth spread,
And oyles and dainties cast, and frankincence the fire doth feed.
When falne his cinders were, and longer blase did not endure,
His reliques and remaines of dust, with wine they washed pure,
Then Choriney his bones in brasen coffin bright did close.
And, sprinkling water pure, about his mates three times he goes:
And drops of sacred dew, with olive palmes on them did shake.
And compasse blest them all, and sentence last he sadly spake:
To fields of joy thy soule, and endlesse rest we doe betake.

From the above quotations all the more important items of the classical ceremony of cremation may be gathered. In the case of emperors and other great leaders of men, military or political, the mourners and other persons present (soldiers, &c.), made a solemn procession three times around the pyre.

Οἱ δὲ τρὶς περὶ νεκρὸν ἐΰτριχας ἤλασαν ἵππους
Μυρόμενοι. —*Iliad* XXIII., 13, 14.

This was done either *before* the application of the torch—

Inde ter armatos Minyis referentibus orbes
Concussi tremuere rogi, ter inhorruit æther
Luctificum clangente tuba, jecere supremo
Tum clamore faces.
—*Valerius Flaccus*, Argon. Lib. III.

Or *after*—

Ter circum accensos cincti fulgentibus armis
Decurrere rogos, ter mœstum funeris ignem
Lustravere in equis, ululatusque ore dedere.
Virgil, Æneid. XI. 188.

During the time the pile was burning the relations and friends stood by it, and poured out *libations of wine*, calling on the name of the deceased. The complete combustion of an enormous pyre like that of Patroclus must have occupied a considerable time—we are told that Achilles remained by it all night :—

> —— ὁ δὲ πάννυχος ὠκὺς Ἀχιλλεὺς
> Χρυσέου ἐκ κρητῆρος, ἔλων δέπας ἀμφικύπελλον,
> Οἶνον ἀφυσσόμενος χάμαδις χέε, δεῦε δὲ γαῖαν,
> Ψυχὴν κικλήσκων Πατροκλέος δειλοῖο.
>
> —*Iliad*, XXIII. 218–221.

When the pile had collapsed and the flaming had ceased, the *remains of the fire were extinguished with wine*, and the bones and ashes were carefully collected :—

> Πρῶτον μὲν κατὰ πυρκαιὴν σβέσατ' αἰθοπι οἴνῳ
> Πᾶσαν, ὁπόσσον ἐπέσχε πυρὸς μένος· αὐτὰρ ἔπειτα
> Ὀστέα Πατρόκλοιο Μενοιτιάδαο λέγωμεν
> Εὖ διαγνώσκοντες· ἀριφραδέα δὲ τέτυκται·
> Ἐν μέσσῃ γὰρ ἔκειτο πυρῇ, τοὶ δ' ἄλλοι ἄνευθεν
> Ἐσχατιῇ καίοντ' ἐπιμὶξ, ἵπποι τε καὶ ἄνδρες·
>
> —*Iliad*, XXIII. 237–242.

> First let us quench the yet-remaining Flame
> With sable Wine; then, (as the Rites direct,)
> The Hero's Bones with careful view select:
> (Apart, and easy to be known they lye,
> Amidst the Heap, and obvious to the Eye;
> The rest around the Margins will be seen,
> Promiscuous, Steeds, and Immolated Men.)
>
> —*Pope.*

In some cases the *bones* were *washed with wine*, and afterwards *anointed with oil.* Agammemnon informs Achilles how this part of the ceremony had been carried out on his own remains :—

> Αὐτὰρ ἐπεὶ δή σε φλὸξ ἥνυσεν Ἡφαίστοιο
> Ἠῶθεν δή τοι λέγομεν λεύκ' ὀστέ', Ἀχιλλεῦ,
> Οἴνῳ ἐν ἀκρήτῳ καὶ ἀλείφατι.
>
> *Odyssey*, XXIV., 71–73.

> But when the Flame your Body had consumed,
> With Oils and Odours we your Bones perfumed
> And washed with unmixed Wine.

As in the other steps of the ceremony, the use of the wine and oil was dictated by the feeling of respect for the remains of the dead, and the knowledge of the deodorising and antiseptic properties of the applications employed.

How the bones and ashes of the honoured dead were distinguished from the surrounding *débris* is a problem which has taxed the resources of the antiquarians not a little. So far as relates to the *bones*, Homer has accounted satisfactorily for those of Patroclus in the quotation already given; they were well set apart by their central position. The question of preventing the mingling of the ashes with those of the other constituents of the pyre has not been so satisfactorily answered. The funeral arrangements of Homer and of Virgil—given in each case with fairly minute detail—make no provision for the absolute preservation of the ashes of their heroes. Neither makes any allusion to the practice mentioned by Pliny:—"Inventum jam est etiam, quod ignibus non absumeretur. Vivum id vocant, ardentesque in focis conviviorum ex eo vidimus mappas, sordibus exustis splendescentes igni magis, quam possent aquis. Regum inde funebres tunicæ, corporis favillam ab reliquo separant cinere. . . . Vocatur autem a præcis *asbestinum* ex argumento naturæ." Only by a covering of some incombustible material could, so far as I can see, the ashes of a departed hero have been kept absolutely unadulterated with the surrounding vegetable or animal *débris*.

Another detail in connection with this ceremony, which must have given more trouble than the poetical descriptions before us would seem to indicate, is the procuring of complete combustion of the soft parts of the body. Even with all our modern improvements in the production of apparatus for the generation and application of heat, it has burdened the resources of the latter-day apostles of cremation not a little to procure perfect incineration of the human body within a reasonable limit of time. When the practice of cremation was enthusiastically supported by the Medical Congress at Florence in 1869, and a fortunate opportunity presented itself a few months later of making the initial experiment on the remains of an Oriental potentate—"L'opération dura huit heures, bien que le bûcher fût composé de bois très inflammables, que le corps fût imprégné de naphtaline et de substances résineuses et que le vent soufflât avec impétuosité." "L'incinération à l'air libre est un mode complètement défectueux. . . . Dans ces conditions, la combustion est

toujours lente, incomplète et ne fait que carboniser les corps qu'on lui confie. C'est l'état dans lequel on les retrouve le plus souvent après les incendies, bien qu'ils aient séjourné de longues heures sous un immense brasier." The special forms of apparatus, which were soon furnished under the inspiration of the enthusiasm of the cremation movement, have given, of course, far better results. The Polli-Clericetti and the Gorini furnaces are able to complete the incineration of the human body within two hours; while the Siemens apparatus, in an experiment made by Thomson, reduced a horse of 220 lbs. weight to an ash of 5 lbs., in the space of 35 minutes; and without any appearance of smoke, or evidence of gaseous waste of any kind. Such a result would appear to leave but little scope for improvement in this direction.

(*To be continued.*)

LIFE STATISTICS IN THE UNITED STATES.

The *Medical Record* thus summarises, from an article in the *North American Review*, some interesting information upon the movement of population in the United States:—"There has been a steady decline in the rate of increase of population, but the annual increase of American-born population has been a uniform one up to the last decade, when it fell to 17½ per thousand. This declining ratio has been coincident with a very great increase to the city population and a decrease in the relative number of children. One striking fact is brought out, namely, that in the United States there are more children per thousand inhabitants than in any European country; thus the number of persons under 15 years of age per thousand inhabitants in this country is 368, while in France, which furnishes the other extreme, it is only 266. Still another fact, which is not of so pleasant a character, is that the span of life in the United States is shorter than in Europe. Comparatively few people in the United States pass the age of 60. Thus, the number of persons 60 years or more of age among 1,000 persons over 20 years of age is in the United States 107, while in England it is 134, and in Ireland 196. It seems, therefore, that in the United States the rate of increase in population is diminishing, that the number of children per thousand is greater than in any other country but is decreasing, and that old age is not so often reached as in other lands."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Manual of Pharmacology and Therapeutics. By WILLIAM MURRELL, M.D., F.R.C.P., Physician to, and Lecturer on Pharmacology and Therapentics at, the Westminster Hospital; late Examiner in Materia Medica in the University of Edinburgh, and Examiner in Materia Medica and Pharmacy to the Conjoint Board of the Royal College of Surgeons of England, and the Royal College of Physicians of London. London: Baillière, Tindall & Cox. 1896.

THIS work, the author tells us, is an abstract of the lectures delivered at the Westminster Hospital, and, consequently, deals only with such drugs and processes as formed the subjects for Dr. Murrell's lectures.

The work is divided into four sections. No. I. is taken up with an introduction and a series of pleasantly written articles on diet, exercise, climatology, clothing, the art of prescribing, and soforth. Section I. is, however, defaced by the article "Massage," which, in its present form, is very objectionable. We think an account of the domestic arrangements of a London brothel is uncalled for and offensive in a scientific book. The article "Idiosyncrasy" is not at all up to the author's standard—the illustrative cases are not happily chosen; many cases much better suited for the purpose lay to hand.

Very objectionable is the writing on "Old-fashioned Remedies;" why the author persists in unnecessarily dragging in prurient matter is a mystery to us. He gives no faithful picture of medicine in the days of Dioscorides or Pliny, not even of the Saxon Leechdooms, by such quotations. As well might we judge of the Nineteenth Century civilization, by the abject ignorance and superstition of Tipperary and Roscommon, as shown by the recent witchcraft cases.

We dwell on these errors, for we wish to see them removed; they spoil the work of one of our most intelligent and agreeable medical authors.

Section II. deals with Inorganic Substances, and is the best section in the book; it contains a wealth of useful information in a short space, and is very readable. We, however, think that the toxic properties of the bromides should not have been overlooked. It is rather painful to find "death from bromide" cropping up, when our English text-books make no mention of the probability of such an effect from their use. Not long since Dr. Greenless placed two cases of poisoning on record, in which death in each case followed on a 75 grain dose.

Section III., is devoted to the Synthetical Compounds, including Anæsthetics. In this section we notice a few errors; the author falls into the common mistake of giving Mr. Davy too much credit for the introduction of nitrous oxide gas. The fact is that Dr. Beddoes is deserving of the credit given to Davy. Beddoes discovered and placed on record the anæsthetic properties of the gas, and told Davy to use it, as he had experienced its pain-killing powers and had administered it to Mrs. Beddoes—one of the Edgeworths of Longford—and his friend Coleridge. To Beddoes we are also indebted for the introduction of ether. He gives very explicit directions: "One or two teaspoonfuls are to be placed on a saucer, and the saucer is to be placed over a cup of hot water, and the vapour is to be inhaled. In the year II. of Liberty—for Beddoes had become tinged with the spirit of the French Revolutionists—Beddoes wrote, "Under proper management, the application of modified air to the lungs is perfectly safe and easy. The mixed airs are breathed out of bags, and no trouble or exertion is required on the part of the patient." Amongst the first to adopt inhalation of ether was Pearson of Birmingham, whose letter to Beddoes is still extant. To Dr. Crawford W. Long is due the credit of using etherisation to kill the pain of a surgical operation. Happily, Long entered on his books, but unfortunately he did not publish the case. Particulars of this Venable case and of Dr. Long's career, fortunes and misfortunes, were told by Marion Sims in 1877, and by Dr.

Luther in 1895. Space will not allow us to give them, but we may just say that Long's operation on Venable took place in Athens, Georgia, and that his memory is honoured throughout all the Southern States, and there are few practitioners who have not a copy of Dr. Landon B. Edwards' splendid steel engraving of Long in their study.

Drugs of vegetable origin occupy Section IV., and here the author indulges in historical anecdote which, for a student, may enliven the pages. We get the apocryphal story of Prince Gentius, and find no notice of the martyrdom of the poor slave, Quassia—a story more tragic than that of Joan D'Arc. The reference to the naming of the Cinchona is not quite exact; Don Luis Geronimo Fernandez de Cabrerai y Bobadilla was the fourth Count de la Chinchon; and the widow of the Marquis de la Salinas, when she married the Count, naturally adopted the spelling Chinchon, and not Cinchon, as given by the author.

Amongst the list of anhidrotics we find Agaric acid, but in Section IV. we get no account of the drug. No doubt, agaracin did not prove as valuable as was hoped, in the author's hands, and was equally disappointing to Professor Hare; still we incline to the opinion that good results are the rule when agaric acid is used, and we should have been glad to have had Dr. Murrell's views on its therapeutic value.

We have not hesitated to freely criticise the book—it can well afford examination, for, when all the faults are brought to light, there remains a great mass of valuable information; valuable to student and practitioner. Its pages teem with hints; the outcome of a life of a close, well-trained observer—one to whom we are indebted for this the most practical and useful book on Pharmacology extant.

Rough Notes on Remedies. By William Murray, M.D., F.R.C.P., London; Newcastle-on-Tyne. London: H. K. Lewis, 136 Gower-street, W.C. 1896.

In a small duodecimo volume of one hundred pages Dr. Murray has succeeded in placing more useful information than is to be found in many large and pretentious volumes.

No more valuable matter has appeared for years than the author's article, "Our Mistakes;" it is, indeed, pregnant with good. Next in importance comes the article on "Arsenic." It is just one of those practical articles, such as Fothergill used to write; the author almost seems to be talking over the cases with the reader, so easy and colloquial is the style, and yet so clear. We are glad to see some physician telling of the evil effects that occasionally follow heavy dosing of epileptic patients with bromides. Such empiricism is better suited to the advertising evangelistic quack than the member of a noble profession. Dr. Murray justly praises nitrate of silver, and refers to Gowers and Johnson in support of his views, but we do not like in this connection to find Higginbotham forgotten, whose "Additional Observations on the Therapeutic Use of Nitrate of Silver" was one of the most useful medical books of the century. The good, old-fashioned remedies, Calomel and Belladonna, come under the author's notice, and he treats of them with such a wealth of clinical experience that we should be glad to know the book was read by every young practitioner.

Dr. Murray, by publishing his short notes, has done a public service.

Elementary Agricultural Chemistry and Geology. By SIR CHARLES A. CAMERON, Professor of Chemistry and Hygiene, Royal College of Surgeons; Lecturer on Chemistry and Geology, Albert National Agricultural Institution, Glasnevin, &c., &c. Dublin: Hodges, Figgis & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Limited. 1896. Pp. 160.

SIR CHARLES A. CAMERON'S versatile genius as a man of letters, not less than as a man of science, is displayed in "this little book," as the author modestly describes it in a brief preface. Intended to be an aid to the pupils attending the lectures on Chemistry and Geology, delivered at the Albert Agricultural Institution, Glasnevin, Sir Charles expresses the hope that it may prove useful to students preparing for examinations in scientific agriculture. We have no doubt it will, and we further agree with the author that, although

the book is mainly scientific, "it contains some information likely to prove useful to the practical farmer."

The amount of ground covered in the one hundred and sixty closely printed pages of this work is wonderful. In the earlier chapters a clear account is given of the chemical elements, their properties and combinations. Chapter IV. explains chemical nomenclature. Then follow four chapters on plants, their development, constituents, and food. Chapter IX.—inserted, perhaps, a little out of its proper place—describes the mode of preparation of some of the more important bodies referred to in the book. An interesting account of soils occupies Chapters X., XI., and XII.; after which comes a capital geological disquisition on "Rocks," followed by a description of the geology of England and Wales, of Ireland, and of Scotland (Chapters XIX., XX., and XXI.). We are next told how soils may be improved and how they lose and gain.

"Manures" are discussed at considerable length and in easily understood language, and the closing chapters are devoted to the subjects of animal heat and motive power, animal nutrition, and the composition of the more familiar foods. The book ends with a very full Subject-Index.

Our only regret is that this really valuable work has not a more costly setting, but the exigencies of the book-market prevented this. The net cost is only eightpence.

The Theory and Practice of Hygiene. By J. Lane Notter, M.A., M.D. (Dub.), Brigade Surgeon Lieut.-Col., A.M.S.; Professor of Hygiene, Army Medical School, Netley; and R. H. Firth, F.R.C.S., Assistant Professor of Hygiene, Army Medical School, Netley. London: J. & A. Churchill. 1896. 8vo. Pp. 1,034.

This book is based upon the classic work of the late Professor Parkes of Netley, as revised by the late Professor de Chaumont, and subsequently edited by Professor Lane Notter. It is apparently intended to supersede Parkes' work, which, though originally intended for the use of army medical men, ultimately became the favourite text-book on

hygiene with civilian sanitarians, The present work leaves out some portions of Parkes' hygiene, but adds a considerable amount of matter of great interest to the medical officer of health. The opening chapter deals with water, devoting 118 pages to that important subject. We are told that "water evaporates at all temperatures when in contact with atmospheric air or other gas." The word *even* should precede "when," for water evaporates irrespective of the presence of air or other gas. Surely, also, it is rather begging the question to speak of atmospheric air as a "gas." The problem of the composition of atmospheric air is not such a simple one as such a description would lead one to suppose.

How very different are not the quantities of water per unit of the population supplied to different towns—in Berlin the quantity is 22 gallons daily, in Dublin and London 35, Paris 52, in Rome 220? The different qualities of water are considered — that from deep wells being recommended as purest, unless very hard. This is good advice, for no filtering material is, on the whole, equal to the soil, provided that the water percolates through a sufficient thickness of it. The authors do not assent to the theory that the purity of water can be properly judged by the number of micro-organisms present in it. The quantity of organic matter in water is of less importance as a factor in determining its fitness for use than the nature of the organic matter, if it could be really determined by chemical analysis. In the same way, it is not so much the number as the nature of the micro-organisms in water which determines its fitness for potable purposes. For our part we would prefer to drink water which contained very little organic matter and very few micro-organisms. No doubt there are cases on record in which it was proved that the bacteria of infective diseases were present in a water which did not contain so many micro-organisms as waters did which had long been drank without being known to cause illness. We know, too, that the dejecta of patients affected by enteric fever have been present in water containing not more organic matter than is found in water classed amongst the best. The simple fact is, that it is quite possible to have pathogenic organisms in water containing very few organisms and very little organic

matter. It is for this reason that the sources and surroundings of water supplies are of interest, and that the pedigree of a water supply is often of more practical value than that of a man! Still we are by no means disposed to decry the importance of either the chemical or the bacteriological examination of water. The less organic matter and the fewer the organisms which water includes the less likely is it to contain the *materies morbi* of disease. The presence of a large amount of organic matter, dead but decomposing, though incapable of communicating a zymotic disease, may produce a bad effect upon the general health. As water is unquestionably a carrier of disease, we gladly welcome every improvement in the methods—chemical, physical, or biological—of examining this important liquid. Professors Lane Notter and Firth have put before us very plainly all the more recent processes for water examination, and this part of their work is specially interesting.

Chapter II. treats of air. Some of the properties—specific gravity, atomic weight, freezing point, &c.—of argon, the newly-discovered constituent of air, are described. Similar information is not given in relation to the other and longer-known constituents of the atmosphere, probably because the authors thought that their readers already knew "all about" oxygen, nitrogen, &c. Much information is given in relation to the impurities of the air, and its chemical and bacteriological examination. This chapter brings its subject-matter well up to date, and the information given in reference to the composition of air expired from the lungs, and its alleged toxic properties, is very interesting, and will to most readers be found in part quite novel.

Chapter IV. deals with ventilation and heating. It is well written, and will be found useful by those concerned in providing pure air and water for hospitals, barracks, &c.

Food beverages and condiments furnish materials for two chapters, occupying 163 pages. Much of the space is devoted to details of analytical processes. The authors say that milk fats (mixed) have a specific gravity of 911 to 913—the range, we believe, will be found to be from 909·37 to 913·9. The fats in artificial butter (margarine) have a specific gravity, according to the authors, as low as 859 to 861, and lard and

tallow, which are used in making margarine (artificial butter) a gravity of 901 to 904.

In the composition of the ash of milk, page 310, it is stated to contain 0·21 per cent. of $F_2P_2O_5$. F is the symbol of fluorine, but is evidently a misprint for Fe, iron. There is, however, no such compound as $Fe_2P_2O_5$, but there is ferric oxide, which is a constituent of milk ash. How is it that in the authors' statement of the composition of the ash of milk no mention is made of magnesium? Nor are they peculiar as regards this omission. It is quite clear that, as milk is a perfect food, and as magnesium is an essential constituent of animals, that element must be present in milk. In view of the importance of the subject of diseased and otherwise unsound food, we think our authors would have been justified in devoting more space to this subject than they have considered necessary. For example, the question of the spread of disease by means of shell-fish has for some time past excited great attention, and forms the subject of an elaborate Local Government Board Report. Our authors, however, give only eight lines to the subject.

Chapter V., on clothing, comprises only nine pages, and that on exercise runs over 12 pages. Very little is said as to the forms of exercise, and the bicycle is unnoticed.

Chapter VII. extends throughout 57 pages, and treats fully of soils in relation to hygiene. The relation between the soil and enteric fever in Dublin is referred to, and quoted from this Journal for 1888.

In Chapter IX. we have the subjects of habitation treated upon at considerable length, and much information given in reference to hospital construction.

Chapters X., XI., XII., and XIII. deal with sewage, parasites, and infective diseases disinfection.

In speaking of the action of nitric acid on copper, the authors say that nitrous acid is evolved. This acid does not exist as gas, and even in its anhydrite, N_2O_3, is probably not formed when nitric oxide, N_2O_2, comes in contact with the air. The compounds which really disinfects is N_2O_4.

We are glad to see a description of Dr. Thresh's steam disinfector, which, though apparently as effective as the high-pressure steam steriliser, is very much cheaper.

In the chapters on Climate and Meteorology we find that the information in Dr. John W. Moore's work on Meteorology has been freely taken advantage of, and almost the *ipsissima verba* of that author have been employed. A few illustrations of this statement, taken almost at random from only four pages of each work, may prove interesting. We arrange the quotations in parallel columns :—

Moore.	Notter and Firth.
"A thermometer consists of a capillary glass tube of uniform bore, hermetically sealed at one end, and blown at the other into a bulb filled with mercury or spirit."—Pages 98, 99.	"A thermometer consists of a capillary glass tube of uniform bore, hermetically sealed at one end, and blown at the other into a bulb filled with mercury or spirit."—Page 713.

The authors would scarcely have so slavishly followed Dr. Moore's definition of a thermometer had they read the criticism on this passage which appeared in Symons's *Meteorological Magazine* (Dec., 1894, page 171):—"At the top of page 99 a few words have dropped out, the result being rather comic, although everyone can see what the Dr. means," &c.

Moore.	Notter and Firth.
"The melting point of ice is exactly 32° F., and 0° of both the Centigrade and Réaumur scales. The phrase is used in preference to the 'freezing point of water,' because water if perfectly still, may be chilled several degrees below 32° F. without freezing. Under such circumstances, if it is suddenly agitated, it will congeal instantly. Again, water which holds a salt in solution has a freezing point considerably below 32° F."—Page 97.	"The melting point of ice is used in preference to the freezing point of water, because distilled water, if perfectly still, may be chilled to a temperature several degrees below that at which, if not perfectly still, it would freeze. Under such circumstances, if it is suddenly agitated, it will congeal instantly. Again, water which holds a salt in solution has a freezing point considerably below that which has no salt in solution."—Page 714.

It will be observed that the attempt to vary the language from that of the "original" has not tended to the lucidity of this second passage in Messrs. Notter's and Firth's version. Clearly some such word as "phrase," "term," or "expression" is needed before the words "melting point of ice" at the beginning of the sentence. Besides, a freezing point, "which has no such salt in solution," strikes one as a somewhat remarkable kind of a freezing point.

MOORE.

"A *standard thermometer* is made with every precaution to secure accuracy. It is not intended for daily use, but only for testing from time to time the correctness of the ordinary thermometers with which observations are made. The scale should not be cut on the stem for several years after the carefully selected tube and bulb have been filled. This delay is necessary in order to guard against the defect called the 'displacement of zero.'" —Page 100.

NOTTER AND FIRTH.

"A *Standard thermometer* is made with every precaution to secure accuracy, and is intended less for daily use than for testing from time to time the correctness of the ordinary instruments. * * * The scale should not be marked for several years after the tube has been filled, in order to guard against the defect known as the displacement of zero."—Page 715.

It will be noticed that we have introduced asterisks into the last quotation from *Hygiene*. This, of course, means that we have omitted something. We supply the omission:—

MOORE.

"Except for use in extremely cold climates, a standard thermometer should be made with mercury, because of its uniform rate of expansion. Its scale should range from far below zero to the boiling point of water."—Page 101.

NOTTER AND FIRTH.

"Except for use in extremely cold climates, a standard thermometer should be made with mercury. Its scale must be cut on the stem, and should range from far below zero to the boiling point of water." —Page 715.

Under the heading *Ordinary Thermometers*, we find this parallelism:—

MOORE.

"At least once a year each instrument should be tested for the 'displacement of zero,' by being plunged into a mass of melting snow *or* ice."—Page 101.

NOTTER AND FIRTH.

"At least once a year each instrument should be tested for 'displacement of zero,' by being plunged into a mass of melting snow *and* ice."—Page 715.

The substitution of the conjunction "and" for the disjunction "or" does not improve the meaning of this sentence.

We could multiply examples of what we shall not call by the harsh term "plagiarism," but we forbear, because, after all, the old proverb is true, "imitation is the sincerest flattery." The worst of it is that the only acknowledgment of the source of the author's *language* is the inclusion of Dr. Moore's book in the bibliography at the end of the chapter on Meteorology. Clearly, to write a book is one thing, to compile a book is another.

"Vital Statistics," "Offensive Trades," "Sanitary Laws," "Military Hygiene," and "Marine Hygiene," are the headings of the remaining chapters of this comprehensive and valuable work, which certainly deserves a place in the library of every sanitarian. We have much to say in its praise and but little in the way of criticism. With regard to mechanical details, type and paper are excellent, and the book is worthy of the great publishing firm from which it has issued.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science by Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. Volume IV., Diseases of the Vascular System and Thyroid Gland. London: Sampson Low, Marston & Co., Limited. 1896. 8vo. Pp. 841.

THIS volume is one of peculiar interest and importance, although the contributors to its pages are only four in number. Of these, three are English physicians—Dr. Bernard Dawson, the Medical Registrar of the London Hospital; Dr. Arthur Ernest Sansom, Physician to the same hospital; and Dr. George R. Murray, Pathologist to the Hospital for Sick Children, Newcastle-on-Tyne, and Professor of Pathology in the University of Durham. The fourth contributor is Dr. James T. Whittaker, of Cincinati, Professor of the Theory and Practice of Medicine, and of Clinical Medicine, in the Medical College of Ohio.

Dr. Whittaker "opens the ball" with a monograph on "Diseases of the Heart and Pericardium." It begins with a historical note, which is chiefly remarkable for the omission of the names of Corrigan and Stokes. The magnitude of Dr. Whittaker's article is such that it occupies more than half of this large volume—454 out of 841 pages. He treats of morbid conditions of the pericardium, of myocarditis and endocarditis, of various valvular lesions of the "fat heart," and of "fatty degeneration of the heart," of cardiac rupture, syphilis, aneurysm, thrombosis, tumours, parasites and neuroses of the heart, of palpitation, tachycardia, bradycardia, arrhythmia, and angina pectoris. There is little to criticise unfavourably in this long bill of fare. We do, however,

question the pathological as well as the historical and clinical accuracy of the following sentence at page 119—"*Acute inflammation* of the heart was first seen in the course of, or as a sequel to *typhoid fever*." Louis, we presume, was indeed speaking of this form of continued fever when he described the condition of the heart, which resulted in softening; but Stokes was not. It was certainly typhus fever which he meant in his classical observations upon the state of the heart in "fever." And surely Dr. Whittaker is well aware that some of the ablest writers on the subject hold, that the process is not an inflammatory one in any sense, but an acute non-inflammatory degeneration of the heart-muscle. Certainly, if inflammation exists, it is of a peculiar kind, sparing the pericardium on one side, and the endocardium on the other, and being followed, in practically all surviving cases, by an apparently complete recovery.

At page 235 we are left in doubt as to the authorship of the term *frémissement cataire*. "This thrill," we are told, "is the *frémissement cataire* of Laennec, which was first observed by his distinguished preceptor, Corvisart." A reference back to page 231 settles the question of authorship, which is rightly assigned to Laennec, Corvisart having called the phenomenon *bruissement* simply. In the proper name "Caroli" (page 166) we, with difficulty, recognise our friend, Dr. O'Carroll, Physician to the House of Industry Hospitals, Dublin. "Angustia aortæ," as the Latin rendering of aortic stenosis, should more properly be "angustiæ aortæ," for the word "angustia" is not used in the singular number in classical Latin. The "fat heart" (page 335) is an excellent name for an accumulation of fat about the heart (fatty deposition), in contradistinction to "fatty degeneration of the heart" (fatty infiltration). We observe that, in enumerating the causes of *pseudo-angina pectoris* (pages 442-444), Dr. Whittaker omits any mention of the blood-poisons of infective diseases, which, undoubtedly, play as important a part as the toxic causes he does give—alcohol, smoking strong tobacco, abuse of tea and coffee, gout, and lead-poisoning.

Although we have felt constrained to criticise a few points in Dr. Whittaker's monograph, we desire to congratulate him, and also the editor, Dr. Stedman, on the excellence of

his work. It is a masterly treatise on Diseases of the Heart and Pericardium, and worthy of "Twentieth Century Practice."

Dr. A. E. Sansom is so well known as a writer on diseases of the circulation, that it goes without saying that his contribution on "Diseases of the Blood Vessels," possesses conspicuous merit. An interesting feature is, that his treatise is in part, illustrated by his daughter, Miss Mabel Sansom. The topics he discusses are, in order, diseases of the aorta, inflammation acute, sub-acute and chronic; atheroma in chronic aortitis; aneurysm; diseases of the pulmonary artery, of the systemic arteries; arteriosclerosis; aneurysms of the systemic arteries; diseases of the veins, including phlebitis, angioma and hæmorrhoids (written "hemorrhoids"). There is a brief and select bibliography at the end of the article.

In "Diseases of the Lymphatic Vessels," Dr. Bernard Dawson gives a succinct account of lymphangitis (or, more correctly, lymphangeiitis), obstruction of the thoracic duct or its venous outlet, chylous ascites, chylothorax, chylocele, chyluria; lymph-angiomata and elephantiasis.

The last article in the volume is on "Diseases of the Thyroid Gland"—myxœdema, cretinism, exophthalmic goitre, goitre, and other morbid conditions. With much propriety, the task of describing this group of maladies was entrusted to Dr. George R. Murray, of Newcastle-on-Tyne, whose researches on thyroid feeding date back to the close of the year 1890, and have conferred so great a boon upon the unhappy victims of "hypothyrea," in its varied forms of myxœdema and cretinism, whether congenital or sporadic and endemic. In an introductory note, the author observes that the subject of diseases of the thyroid gland belongs partly to medicine and partly to surgery. The greater part of this article is devoted to the consideration of the medical diseases of the thyroid gland, which are accompanied by general symptoms namely, myxœdema, cretinism and exophthalmic goitre, as they are of greater interest to the physician. The local diseases of the thyroid gland, which do not cause constitutional disturbance, are considered more briefly, as they frequently require surgical rather than medical treatment.

Dr. Murray has given us a well written and exhaustive

account of the medical diseases of the thyroid gland. Appended is a bibliographical list, including 192 entries. The list, however, is not complete, for it contains no reference to Dr. A. W. Foot's very able paper on exophthalmic goitre, which appeared in the number of this Journal for November, 1880 (Vol. LXX., page 452), or to Dr. James Craig's more recent paper on the same disease, published in our number for June, 1894 (Vol. XCVII., page 508). The latter omission is the more curious, seeing that the author refers to a remarkable case recorded by Dr. Craig, in which "the lower portion of each cornea was ulcerated. There was no anterior chamber, and the patient could only distinguish light from darkness." (Page 776).

The volume is well printed, but the illustrations are in some cases indifferent, inartistic and rough. This criticism does not apply to the pictures of exophthalmic goitre, on pages 77 or 771, or to Miss Sansom's drawings on pages 465 and 467.

The Natural Arsenical Waters of La Bourboule. Notes with reference to their Therapeutic Value in the Treatment of Diathetic Maladies and Cachexias in General. By A. M. BROWN, M.D. With an Introduction and Notes by GUY CADOGAN ROTHERY. London: The Sanitary Publishing Co. Pp. 38.

THE rarity of arsenical springs, and their value in the treatment of certain classes of disease, give special interest to this tract. There is, if we remember aright, a mineral water containing arsenic in England, but it has not been utilised for therapeutical purposes. In France several springs—at Mont Dore, La Malou, Vals, Vichy, Plombières, St. Nectaire—have traces of arsenic in their composition; but the spring of Choussy-Perrière at La Bourboule is an arsenical water. Its characteristic is a high percentage of the sodium arsenate and sodium chloride, with a small amount of iron.

This copious spring—discharging 23,310 litres in the hour—has a constant temperature of 60° C. Its composition per litre, as analysed by MM. Bouis and Lefort in 1878, is

as follows:—Sodium arseniate, 0·02847 "(equal to 7 milligrammes of arsenic"); free carbonic acid, 0·0518; sodium chloride, 2·8406; potassium chloride, 0·1623; magnesium chloride, 0·0320; sodium bicarbonate, 2·890; sodium sulphate, 0·2084; "bicarbonate of lime," 0·1905; ferric oxide, 0·021; silicic acid, 0·1200; with traces of lithium chloride, manganese and aluminium.

The water of this spring is carefully bottled for export; but its good effects will be more surely produced on the spot, where internal administration is combined with baths. These are taken at a temperature of 35° C., and, as a general rule, continued for half an hour at a time.

For a list of the diseases likely (or certain) to be benefited by the use of the arsenical water of La Bourboule, we must refer our readers to Dr. Brown's pamphlet. It seems to include most of the diseases to which flesh is heir; and, perhaps, a grain or two of sodium chloride may be taken with the author's sanguine description. The temperature and composition of the water, however, will suggest to the practitioner cases in which the spring may be recommended with prospect of favourable results.

Army Medical Department Report for the Year 1894. *With Appendix*. Volume XXXVI. London: 1896. Pp. 391.

In a recent work, *Les Maladies Vénériennes dans les Armées Anglaise, Française et Russe*, M. Commenge gives figures which show the admissions to hospital, per mille, due to venereal diseases, for the year 1892, in the armies of England, France, and Russia. They are, respectively, 201, 44, and 44. The corresponding numbers for syphilis only are stated to be 33·8, 9·2, and 13·7. These figures are encouraging to those worthy people who labour to assist the Almighty in managing the world by promoting disease as a consequence of incontinence. The English army is the rottenest of the three armies compared by M. Commenge; it is probably the rottenest in the world. In noticing this Report for 1894 we shall merely examine a few of the venereal statistics.

In the troops serving in the United Kingdom there were

18,122 admissions for this class of diseases, and 1,632 men constantly sick. (The districts with fewest admissions were Cork, the Curragh, and Belfast.) The ratios per 1,000 of admissions and of constantly sick were :—For England, 174·10 and 16·11; for Scotland, 151·50 and 10·65; for Ireland, 126·40 and 10·79. In the East the ratios are still more striking. Even in Ceylon they are 270·70 and 20·42; in China, 325·70 and 24·42; in the Straits, 353·80 and 30·05. But it is in the Indian commands, where protective precautions have been swept away by the wisdom of Parliament that the prevalence and increase of venereal diseases are seen at their worst. This Table speaks for itself :—

	Admissions per 1,000, 1894	Constantly sick per 1,000, 1894	Average admissions per 1,000, 1886–93	Average constantly sick per 1,0000, 1886–93
Bengal ...	422·6	35·6	318·2	24·8
Madras ...	465·4	41·4	327·1	28·17
Bombay ...	454·3	35·8	348·1	25·8

We conclude with an extract from the *Homeward Mail* :—

"The Calcutta correspondent of the *Times* telegraphed on March 17 :—The ravages of venereal disease among the garrison were worse than ever. There were over 3,000 men constantly in hospital from this cause. The rate of admission per 1,000 rose to 511, as compared with 466 in the previous year. Only 26,000 men out of 70,000 were returned as never having suffered from this disease. The garrison is practically weakened by three regiments from this cause alone."

Our Growing Children, with Special Reference to the Physical Education of the Weakly. By GERARD SMITH, M.R.C.S., London : John Bale & Sons. 1896. Pp. 104.

THIS little book of Mr. Gerard Smith's will be found most useful to the classes for whom it is intended—those who have in their hands the physical education of weakly children,

and who have neither opportunities nor means of obtaining the advice of specialists. The chapter devoted to stoops and round shoulders is excellent. The author does not smile upon straps and braces as correctives. He very properly relies on adapted exercises, for which he gives detailed instructions.

His opinion of corsets for stooping girls (p. 64) is most excellent. We quote the concluding passage :—

"Corsets may do little harm beyond keeping the body too hot *if they be fitted to the body and waist*, but the attempt so generally made of *fitting the girl to the corset* can only end in disaster. A corset with a natural and pretty waist to it is of no harm *if there be such a waist inside it.*"

RECENT WORKS ON THE EYE.

1. *Researches into the Anatomy and Physiology of the Eye.* By E. Treacher Collins, F.R.C.S. With 10 plates, and 28 figures in the text. 8vo. Pp. 140. London: H. K. Lewis. 1896.
2. *The Methodical Examination of the Eye, being Part I. of a Guide to the Practice of Ophthalmology, for Students and Practitioners.* By William Lang, F.R.C.S. 8vo. Pp. 96. London: Longman, Green & Co.
3. *Eyesight and School Life.* By Simeon Snell, F.R.C.S., Ed. 8vo. Pp. 70. With 17 illustrations. Bristol: John Wright & Co. London: Simpkin Marshall.

1. In 1894, Mr. Treacher Collins delivered, at the Royal College of Surgeons, London, a series of lectures which attracted much attention. The present volume is an extended, revised, and illustrated reproduction of these lectures, with such additional matter as he has since been able to obtain by his researches.

The author was, for six years, Curator of the Museum at the Royal London Ophthalmic Hospital, where the ample material at his disposal enabled him to carry on a series of original investigations. He has not attempted to treat systematically or exhaustively of the subjects dealt with, but

has written on those points only on which he felt that he had something new, that was worth saying to fellow-workers in his profession.

The book, which is very nicely got up, well printed, and written in clear, concise, lucid English, consists of seven chapters, and amongst other subjects deals especially with the development of the suspensory ligament of the lens and its relation to congenital imperfections in the lens, such as "coloboma lentis;" development of lens capsule; various forms of congenital cataract and congenital abnormalities of the vitreous; the arrangement of the pigment epithelium on the posterior surface of the iris and ciliary body, and their functions as secreting organs; iris cysts; glioma of the retina, not sarcoma; origin of the membrane of Bruch; glaucoma under unusual conditions, as with absence of iris; the mode of formation of cystoid cicatrix; causes of failure of iridectomy in the relief of tension; blood-staining of cornea, &c.

The author has thrown much light upon many of the dark places of ophthalmological ignorance, and must be gratefully congratulated upon the fruitfulness of his labours, whilst at the same time we wish to thank the institution that gave facilities for his original work.

On page 11 the author writes—"The table of measurements of lenses which I have given above (page 5) shows that the transverse diameter of the lens is, at the fourth month, only a little more than the antero-posterior diameter, and *in the adult lens it is nearly three times as much.*" (The italics are ours.) This statement, based upon a mistake in Merkel's measurement is, of course, not correct, as Mr. Collins will, no doubt, before this have perceived. With this single exception, we have nothing but praise for this valuable contribution to ophthalmology.

2. Mr. Lang, in his preface, says:—"The following pages, written primarily for the surgeon who is beginning to study ophthalmology as a special subject, will, it is hoped, be equally of assistance to the student."

This little volume, nicely printed, well edited, and sufficiently illustrated, gives a succinct and clear account of the various methods of examining the different parts of the eye and their functions. It aims at no originality, and con-

tains no novelty, but cannot fail to be appreciated for its accuracy and simplicity of description.

We look forward with hope for the remaining parts of Mr. Lang's "Guide to the Practice of Ophthalmology."

3. This monograph is intended essentially for the lay reader. After dealing, in a popular manner, with the general subject of refraction and ametropia, the author deals with the subject of school lighting, desks, and seating of scholars, reading and writing, hours of study, needlework, physical exercise and the duties of parents and teachers.

Under the last head he says:—"The home life of the pupils plays, without doubt, a by no means unimportant part in the causation of the ills of the school period," and again he says, with much truth, that "parents are too apt to shirk their own responsibilities and throw them on the teachers. If it is necessary that precautions should be taken during school hours, it is equally desirable that they should not be neglected outside.

"When a child with defective sight is sent to school, the teacher should be made aware of the fact by the parents, and especial pains should be taken with that child. It should not, however, be difficult for a teacher to recognise a real defect, and not mistake for stupidity or idleness that which is the result of genuine inability. Many unhappy children have punishments inflicted on them simply and solely for mistakes arising from want of visual power."

We commend Mr. Snell's book to the careful perusal of all parents and school teachers.

Public Health and Laboratory Work. By Henry R. Kenwood, M.B., D.P.H., F.C.S., &c. Second Edition. London: H. K. Lewis. 1896. Crown 8vo. Pp. 453.

In the first edition of this book we had occasion to point out several errors. In the present edition they have been rectified, and the work now forms a very useful little laboratory hand-book. It will also prove useful to students preparing for examinations for diplomas in Public Health. Concise directions are given for the sanitary examination of air, coal gas, soils, water, and food and drinks. An interesting

supplement, by Dr. Christopher Childs, describes very succinctly the bacteriological examination of air, water, soil, food, &c. We can strongly recommend this useful hand-book for the sanitary laboratory.

JENNER IN RUSSIA.

WE have received some papers, through the courtesy of the *Société Russe pour la Protection de la Santé Publique*, in connection with the celebration of the Jenner Centenary in St. Petersburg, on the 14th of May. Four prizes will be given for the best works on vaccination; a Russian translation of Jenner's works will be published, with a biography and portrait, under the editorship of Dr. W. O. Hubert; and an exhibition of objects connected with vaccination will be organised. Competing essays on variola vaccination and subordinate subjects may be written, or printed (subsequently to the 2nd May, 1894) in Russian, French, German, or English. The first prize will be a gold medal and 1,000 roubles, the second a gold medal, the third a small gold medal, the fourth a silver medal. The result of the competition will be announced at the opening of the proceedings.

MEDICAL COLLEGES IN THE UNITED STATES.

ACCORDING to a report of the Bureau of Education for 1893, the number of medical students enrolled in that year was 12,238, and the percentage of the enrolment graduating was 24·9. The percentage of college graduates who study medicine has been declining. There were 132 medical colleges in the United States in 1893. Of these 94 were regular, 16 homœopathic, 10 eclectic, 2 physio-medical, 8 post-graduate, and 2 preparatory. The total enrolment of these was 28,900, and of this number 16,130 were in the regular and 1,445 in the homeopathic schools. There are 36 regular schools that admit women, and there were 1,302 female medical students. The theological schools had 7,856 matriculates and the law schools 6,776 matriculates. The school with the largest number of matriculates was the University of Pennsylvania, the number there being 800. Several other schools have over 600 students. One-fifth of all the medical students, namely, 5,182, are credited to the North Atlantic States, and another fifth to the Central States.—*Med. Rec.*

PART III.

SPECIAL REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.*

By Ringrose Atkins, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford.

I. CLINICAL ASPECT OF NERVOUS AND MENTAL DISEASE.

Mental Disease in the State of New York.—There are now ten State hospitals for the care of the insane in the State of New York, exclusive of the City of New York asylums, which are about to be brought under the State system. The ten hospitals at present contain 12,174 insane patients, and, with the city asylums, the numbers are increased to 19,369. The medical and lay staffs of these ten asylums number 2,721 persons; 91 physicians are directly engaged in the service of these hospitals, exclusive of those engaged in the pathological department, and of the consulting physicians and surgeons. To render available for the purposes of medical science, the vast store of material, clinical and pathological, which lie slumbering in the records of these asylums, the State Commissioners of Lunacy have authorised the publication of a *Bulletin*, which is to appear quarterly, under the control of a staff of editors and collaborators drawn from the asylum physicians and assistants. The first number was published in January last, and contains a series of clinical, pathological, and therapeutic records of considerable interest and value. The *Bulletin* does not partake of the nature of an ordinary medical journal, being solely confined to the publication of case records, pathological findings, and therapeutic experiences in the above-mentioned asylums. It contains no

* The author of this Report, desirous that no contribution to the subject on Nervous and Mental Disease should remain unnoticed, will be glad to receive any publications which treat of it. If sent to the correspondents of the Journal they will be forwarded.

excerpts from other publications, and receives no advertisements.

Trophic Intestinal Affections in the Insane.—Dr. J. P. Cowen, of the Prestwich Asylum, Manchester, has reported in the *Lancet* (March 16, 1895) a series of cases which came under his observation, characterised by inflammatory and ulcerating conditions of the intestines attributable to trophic causes, and which are by no means of infrequent occurrence in the degenerate insane. The conditions to which Dr. Cowen calls attention are as follows:—

1. Any watery alvine flux, very frequently repeated without passage of blood or excess of mucus, usually without pyrexia or marked general symptoms. This may be fatal, but is often recovered from. Obvious intestinal lesions are rarely met with.

2. A frequent diarrhœa with vomiting pains, often tenesmus, and with marked constitutional symptoms. The stools often contain blood, excess of mucus, and slime occasionally. This affection is usually fatal. The necropsy shows an inflammatory condition of the ileum or colon, and often marked ulceration of the mucous membrane. Thirty-two fatal cases have been observed—twenty-two men and ten women. Twenty were cases of general paralysis, the remainder occurred either in stuporous melancholia, or in dementia of an incurable type. Dr. Cowen excludes all cases in which there was the least suspicion of tubercle, typhoid fever, dysentery, Bright's disease, or syphilis. The pathological appearances consisted of patchy congestion of ileum and colon, with enlarged solitary follicles or sub-mucous hæmorrhages, sub-acute enteritis, acute enteritis, and colitis, follicular ulceration of the ileum and of the colon, ulcerative enteritis (ileum), ulcerative colitis, and ulcerative enteritis and colitis. In two cases in which ulceration was confined to the ileum perforation occurred. The ileum and lower part of the jejunum and the ascending and transverse colon were the parts usually affected. The ulcers are of various shapes and sizes, and in several cases tend to run together, so as to form an irregular network of ulceration, leaving islets of sodden and congested mucous membrane in their meshes. The bases of the ulcers are but little thickened. The solitary

follicles may be swollen, are rarely ulcerated, and not seldom are normal in appearance. Peyer's glands are commonly unaffected or but slightly swollen. The inflammation is often intense and localised, but without local cause. In a case associated with dorsal myelitis the inflammation of the upper part of the rectum was most intense, the inner coats having sloughed out. The organisms present were those usually found in the intestines, but the *Bacillus coli communis* was especially common. An inoculation of some of the contents of the gut on nutrient media often yielded an almost pure culture of this organism.

Dr. Cowen bases the connection of the intestinal lesion with perverted nervous action upon the following grounds:—(1) The rarity of such lesions in the sane; (2) the comparative frequency in the degenerate insane; (3) negative evidence as to causation; (4) their association with other trophic lesions; and (5) the association of such lesions with disease of the central nervous system.

Dr. Enrich, of the Whittingham Asylum, writing of the same subject in the *Lancet* of May 15, 1895, considers that these intestinal disorders, so frequently occurring amongst the insane, are simply the result of the general cachectic condition in the large majority of instances. He does not deny that trophic intestinal affections sometimes occur, but he considers them to be much rarer than Dr. Cowen supposes. He adds that only the careful sifting of cases, and minute examination of the nervous system, hand in hand with experiments, will assist in the differentiation of truly trophic lesions from other obscure ulcerative processes in the lower intestinal tract.

Insanity in Children.—Conrads (*Archiv. f. Kinderheilk.*, XIX., 175–216) gives a lengthy review of the subject of infantile mental derangement. First he notices the varieties of insanity in children, and gives an extended *résumé* of the literature. As regards the question of the relative frequency of insanity of the two sexes in children, it cannot be definitely stated with our present statistics.

Among the causes heredity is first; next comes the condition of the child's bringing up, his education and training, the management by nurses by frightening their charges, the

discipline and methods at school, &c. Psychic causes, fear, shame, and especially mental shock, are not to be underestimated. Emminghaus found 23 per cent. of the cases he collected in the literature to be due to these causes; homesickness is not common, but cases have been known. Conrads lays some stress on the evil effects of religious excitement in predisposed older children.

Contagious (mental) and epidemic influences need mention, as they have been repeatedly observed. Onanism has been undoubtedly over-estimated as a cause, but in predisposed subjects it may have its effects.

Among the somatic causes, acute infectious fevers are first in frequency. Emminghaus found these as a cause in 25 per cent. of his cases. Injuries, especially of the head, sunstroke, exposure, &c., have all had their victims. Ear disease and dentition may affect the mental condition, and the effects of nasal disease, adenoid vegetations, and tonsillar enlargements are suggestive. Middle ear disease has been demonstrated by Bouchut and Emminghaus as a cause of infantile derangement; intestinal parasites, tuberculosis, and cardiac weakness are also factors. Hereditary syphilis is the cause of juvenile paresis; whether it acts in producing other forms of insanity is doubtful. Long-continued suppuration has been the cause of melancholia, as in one case of Conrads' own observation. Reflex psychoses, aside from those from ear and intestinal disorders, have been observed to follow wounds, extraction of teeth, &c. Various poisons—lead, mercury, cocaïn, tobacco, &c.—have caused mental diseases in children as well as in adults, and alcoholic insanity has been reported. Conrads gives briefly a case of acute hallucinatory delirium observed by him in a child of two and a half years from this cause.

The permanent psychoses in children occur usually in degenerate individuals, who sooner or later reveal their stigmata. The first symptoms of insanity can naturally be looked for only after the conscious perceptions have become manifest in the child, and must consist in aberration of these. The earliest age at which hallucinations have been observed is fourteen and a half months (Marcé); visual hallucinations are far the most frequent. Delusions can show themselves

only after a certain stage of mental development. The types of mental disease in children fall under two heads—the pure psychoses, and the forms connected with the neuroses. Of the former it is difficult to say whether mania or melancholia is the more frequent in the earlier years, and both are most frequent towards puberty. Mania generally begins without the prodromal depressed phases, runs a subacute course, and generally ends in recovery. Melancholia may assume any of its types, is commonly gradual in its onset, and is subject to remissions. Its course and prognosis are the same as mania.

Suicide in children should be mentioned in this connection, and from the statistics of France and Prussia seems to be steadily on the increase. It is, however, still infrequent. Conrads, taking the proportions of adults and children in Prussia in connection with the statistics of suicide, finds that it is forty-six times less common in the latter than in the former.

Periodic insanity in children is usually of the maniacal type, and with circular insanity has an absolutely unfavourable prognosis. But few cases of either have been recorded. Under hallucinatory insanity Conrads includes two types—acute hallucinatory paranoia, and transitory insanity—both characterised by hallucinations, the former the more chronic, and the latter the acute type. In the former occur the stuporous cases which are often confounded with melancholia. The prognosis of both, except when they succumb to exhaustion or suicide, is favourable.

Paranoia of the pure type is rare in children, but the degenerative prodromal stage of the original paranoia of Sander is very common. These candidates for paranoia are usually of the male sex: in all there is an hereditary taint. They are generally quiet, sentimental, and hypochondriacal children, who are liable to feel themselves slighted by their parents, and often conceive notions of self-importance, which are the insipiency of their delusions. Hypochondriasis is closely allied to paranoia, and while its occurrence is rather rare, and has been denied in children, it is sometimes met with, and is usually a degenerative sign. Its prognosis is favourable only in the milder cases. Imperative conceptions

and acts are also met with, and frequently indicate a degenerative taint, and are often connected with masturbation as an exciting cause, but they are not so serious in their prognosis. The so-called "impulsive insanity" is diagnostically indistinguishable from these impulsive acts, though it has been accepted as a special type. It is always degenerative and of unfavourable significance.

Passing by what is said of idiocy, a word can be given to moral insanity. This Conrads claims rarely exists without some mental impairment, and sexual perversion is often present. Recovery is as improbable as in idiocy, the apparent recoveries are, perhaps, only remissions of long duration. Paresis in children has been lately reported by various authors. Its connection with hereditary syphilis has been already noted.

Among the neurotic insanities that connected with epilepsy takes the first rank. Hysteria is commoner in children than is generally supposed, especially in girls. Heredity is its most important ætiological factor. The mental disorders of chorea consist mostly in capriciousness, irritability, and a great tendency to sudden emotional disturbances. Hallucinations, illusions, and maniacal delirium may also occur, and Leidesdorf has observed hallucinatory paranoia. Very recently Moebius has directed attention to the resemblance of choreic to toxic insanity as supporting the view that chorea may be of infectious origin.

As regards the therapy, it would be best if all cases, except the milder forms of mania, melancholia, hypochondria, and cases of imperative conceptions, and the stuporous cases, were treated early in a special asylum; very few, if any, of which unfortunately exist for children. Prophylaxis is still more important, and should literally begin *ab ovo*. The marriage of degenerates, insane drunkards, &c., is a most prolific cause of infantile insanity and idiocy; where the tendency exists in the child, its bringing up and education must be the subject of the greatest care. Ignorant and reckless nurses, especially if given to drink, may do the greatest injury, and in no case should alcohol in any form be allowed to a child under ten years, excepting, of course, as medicine in acute infectious diseases. Special care should be given to

the points of masturbation and the general habits of the child, to the possibility of nurses or others working injuriously on its fears and imaginations, and to the educational methods and discipline. It would be well if teachers were obliged to study mental pathology in their professional preparation. As a summary of the points, in regard to which it is desirable to direct attention in relation to the psychoses of children, Conrads concludes his paper with the following as desiderata :—

1. Statistics of infantile insanity by means of circulars of inquiry to the medical profession, as to the actual number of insane children in their knowledge.

2. Information as to relapses, by communication from medical men as to the mental disorder of persons who had been insane in childhood. These could be best obtained from family physicians, who are usually able to follow the family history back for a lengthy period.

3. Special asylums for insane children.

4. Sufficient knowledge by teachers of the psychopathic states in childhood, and greater care in schools to mentally defective children.—(*Am. Journ. of Insanity.*)

II. NEURO-ANATOMY AND PHYSIOLOGY.

New Methods of Hardening Preparations.—Dr. Marcus (*Neurol. Centralblatt*, No. 1, 1895) describes a method of hardening nervous tissues which has met with approval in the *clinique* for nervous diseases at Stockholm. He finds his method better than hardening in Müller's fluid or in spirit; the prepared tissue remains more elastic and is less liable to contract. The process takes from two to four weeks. Dr. Marcus has tried this method with the spinal cord of a tabetic patient. After hardening there was a marked difference between the white fresh part and the posterior columns, which assumed a brownish-grey translucent appearance. After hardening the sections were coloured by the Weigert-Pal method.

Dr. Marcus gives the following directions for making preparations :—After the spinal cord has been hardened from two to four weeks in a $\frac{1}{2}$ per cent. solution of formol, a piece $\frac{1}{2}$ cm. thick is cut off and left in Müller's fluid, at a sustained

temperature of 37° C., for a week. It is next transferred for a day to a 95 per cent. solution, and placed for another day in absolute alcohol, and then embedded in celloidin. Sections are next cut with the microtome, which are immediately replaced in the Müller's fluid, and kept at a sustained temperature in the stove for another week. The sections are then washed quickly in spirit, and immersed for two days in a solution of logwood. The method of Pal is subsequently followed for the final colouring and differentiation. In this way, Dr. Marcus says, the colour he obtains is very distinct. The medullary sheath is stained a beautiful blue, while all the degenerated portions are completely dyed; the ganglion cells also become very distinct, showing their nuclei most clearly.—(*Journ. of Ment. Science*).

Nomenclature of various Nerve Cells.—Nissl (*Neurol. Centralblatt*, No. 3, 1895) proposes a precise nomenclature of the different types of cells, without which, he says, it is impossible to ascertain and describe their variations from the normal state. He regards an exact appreciation of the changes in the cells as the basis of a true pathology of the nervous system, This should be worked out by observations on animals. Nissl claims to have already made noteworthy progress; he assures us that we can now answer in the affirmative the question formerly so much disputed—whether after poisoning with lead, arsenic, phosphorus, &c., typical alterations may be found in the nerve-cells? Not only has Nissl found such changes after chemical and bacterial poisons—especially that of tetanus—but he has been able to produce them by sections, separating the motor tracts from the muscles, by deprivation of food, and by the application of electricity. He even claims to be able to distinguish the cells excited by electricity from their neighbours which have not been so influenced.

The Brain Centres for the Muscles of the Neck and Trunk.—Dr. H. Werner, of Jena, with the support of Prof. Ziehen, has made some experiments in order to solve the questions—Where lie the cortical centres for the neck and trunk in the dog, and is there a centre for the movements of the eyes in the frontal lobe of the same animal? In his paper (*Allgemeine Zeitschrift f. Psych.* I. Bd., 1 Heft.), Dr. Werner

explains the successive steps by which, after the first discoveries of Hitzig and Fritsch, the localisation of the cerebral functions was worked out. His own experiments are given at length. He finds that the dog possesses two centres for the muscles of the neck—one in the frontal lobe in front of the pre-Sylvian fissure, the other in the parietal lobe at the lateral end of the posterior sigmoid gyrus, below the centre for the fore-paw. Electrical stimulation of both centres causes a drawing of the snout towards the side stimulated. Dr. Werner explains Hitzig's finding that the frontal lobe was not excitable to electricity by saying that he used too weak currents; he overrules an experiment of Ferrier by saying that he used too strong currents. Hitzig, de Boyer, and Kusick found that after extirpation of the frontal lobe there were no derangements of muscular motion, but this Werner attributes to the parietal centre taking up the function of its frontal colleague.

The centre for the muscles of the trunk lies upon the posterior sigmoid gyrus, between the centre of the two extremities. This centre acts upon the muscles of the same side. Here he agrees with the results obtained by Unverricht and Kusick, and differs from Munk, who places the sphere for the muscles of the trunk in the frontal lobe of the dog. He finds that there is no centre for vision in the frontal lobe of the dog; here he disagrees with Ferrier, who found in the frontal lobe a centre for the movements of the eyes.

The situation of the centres generally varies in different individual animals within definite limits. The excitability of the cortex increases to a certain degree through the action of the electrical stream.

The Genesis of the Epileptic Attack.—Bechterew (*Neurol. Centralblatt*, May 1, 1895) thus sums up the results of investigations by himself and by Drs. Mayer, Suschtschenski, and Wyrnbow, at his instance, on the genesis of the epileptic attack:—

1. Electrical irritation of the motor region of the cortex causes attacks of both partial (Jacksonian) and general epilepsy (the medullary epilepsy of some authors).

2. In the case of the first, the irritation of the motor tract

must be locally limited, of moderate intensity, and of sufficiently long duration, so that the excitation may gradually extend to other centres according to their proximity. Such extension causes, first, clonic contraction of other parts—first on the same side, and later on the opposite side. As soon as the irritation has become general—that is, has extended to all the cortical motor centres—the local clonic convulsions become general, and after that, without further irritation, there is often a tonic cramp, with following clonic convulsions and coma.

3. Stronger electrical irritation, especially if it involves a considerable portion of the motor cortex (which may easily be done if any large portion of one or both hemispheres is brought between the electrodes), causes from the beginning an attack of general or ordinary epilepsy, showing itself first in tonic rigidity of the limbs, followed by general clonic convulsions and coma.

4. Prior excision of one or several, or indeed of all motor centres of one hemisphere does not render impossible the production of epilepsy by irritation of those remaining. The retention of a proportionately small part of the motor cortex of one hemisphere is sometimes sufficient to cause epileptic attacks from cortical irritation.

5. Whenever the whole motor region is removed, the true epileptic attacks cannot be caused, even by strong electric irritation. In such cases the excitation can cause only general tonic contraction, ceasing when the irritation is withdrawn.

6. After complete removal of the motor centres, injections of essence of absinthe, cinchonin, or cinchoidin, may in some cases cause epileptiform convulsions. In one cat with motor centres removed, that accidentally fell from a height of four metres, Bechterew saw a generally tonic convulsion, followed by coma and immovable pupils. It should be stated that in this case there were not very marked clonic convulsions of short duration, which were not slight jerks but were slower extensive movements of the limbs.

7. During the attack of ordinary epilepsy produced by electrical cortical irritation, observed after excision of one or more or of all motor centres, usually all the body is involved in the general tonic cramps, while the clonic convulsions of

these members, the centres of which are removed, are either lacking, or notably weaker, and of shorter duration than the others.

8. In case the greater portion of the motor cortex is excised, the epileptic attacks from electric irritation differ from those induced in the intact brain only in the shorter duration and imperfect development of the clonic convulsions, which are of long duration only in the members whose centres are intact.

9. If in the tonic stage of general epilepsy a quick and complete excision is made of the centre of a limb, the contraction still continues, but the subsequent clonic contractions are notably weakened as compared with the other limbs. If the operation is performed in the clonic stage this ceases sooner in the said limb than in the others.

10. If the electric cortical irritation is only strong enough to cause clonic and not tonic contractions of partial epilepsy, the members, the centres of which have been removed, usually are not contracted until the irritation is increased to the stage of producing tonic contractions. It must be said, however, that here as in the conditions of 7 and 8, there are marked individual peculiarities of the animals used as to the susceptibility of the motor centres.

11. In the comatose condition that usually follows the general convulsion, further electric excitation generally fails to arouse contractions.

12. In newly-born whelps, of an age at which electric irritation of the cortex will arouse isolated (not clonic) contractions, the current, of whatever strength, fails to produce general epilepsy. In such there occurs only a general tonic stiffness, that disappears with the cessation of the stimulus, or even before.

13. The epileptiform attack caused by pricking the pons in rabbits ceases at once if a section is made through the cerebral peduncle, and there remains only a general opisthotonos as the result of the latter.

14. After prior ablation of the hemispheres, pricking the pons will not cause epileptiform convulsions, as it will in uninjured rabbits.

The conclusion from the above is that epileptic attacks

can be produced in adult animals by excitation of the cortical centres. In case the basal regions participate, it is mainly in producing tonic contractions under other conditions (mechanical irritation of the pons, cerebral concussion, and poisoning), the basal regions (pons and medulla) can also cause epilepsy. Still in these cases the cortex undoubtedly takes part in the development of the attack, and the epileptiform character moreover depends upon its irritation. (*Am. Journ. of Insanity.*)

The Circulation in the Brain during Epilepsy.—In a previous number of the *Neurol. Centrlblatt*, Bechterew gives an account of some further researches, made in his laboratory by Dr. Todorski. It was shown by experiments on animals in which convulsive attacks had been artificially excited, that the blood pressure, both in the central and the distal ends of the carotid arteries was increased during the tonic period of an epileptic attack. Bechterew tells us that it was urged against these experiments that he did not take into consideration the alterations of pressure in the great veins of the thorax and abdomen. To meet this objection Dr. Todorski set about a new series of experiments to ascertain the amount of blood pressure, not only at both ends of the carotids, but also at the veins issuing from the brain during the epileptic attacks. For this purpose he introduced a canula into the peripheral and central ends of the carotid, and into the trunk of the outer jugular vein with mercurial manometers. For the jugular the canula was fitted either with a manometer of the same kind, or with one of thinner calibre, with a 25 per cent. solution of sulphate of manganese. The registration was effected with the drum of Ludwig's cymograph.

These experiments showed that at the beginning of the tonic period of the fit, there was an increase of blood pressure, both at the ends of the carotids and at the jugular veins. The increased pressure in the veins persisted during the duration of the epileptic attack. The increase or diminution of the pressure in the carotids kept equal measure with the pressure in the jugular veins, save that in some cases when the convulsions were very violent the pressure in the carotids was higher than that in the veins.

By another series of experiments made upon animals, in which a trephine opening had been made in the skull, Todorski ascertained that the pressure of the cerebro-spinal fluid was in all cases equal to the pressure of the carotids.

In conclusion, Bechterew states, as the result of all these experiments, that during epileptic fits there is an increased flow of arterial blood to the brain. (*Journ. Mental Sci.*)

III. NEURO-PATHOLOGY AND PATHOLOGICAL ANATOMY.

The Physiological Pathology of Epilepsy.—Marinesco and Serieux, in a memoir crowned by the Belgian Royal Academy, in discussing the pathology of epilepsy first take up the physiology of the cortex, holding with Munk and his followers, that the cortical convolutions contain the elements necessary for the perception of impressions, and that their excitation causes, according to the degree of the excitation and the region, hallucinations or convulsions. The neurons of the cortex are of three kinds—the perceptive, or the centripetal axis-cylinder neurons, the associative, and the centrifugal or discharging neurons. There is not, they hold, any direct route between the cortex and the muscles, every so-called voluntary but really reflex movement is made through the intermediation of the lower or spinal centres.

The aura is simply an hallucination of cortical or reflex origin, according as the epilepsy is central or reflex in its nature. In the former, the cortex plays the same part as does the epileptiogenic zone in peripheral or reflex epilepsy. The loss of consciousness which is an essential symptom of epilepsy, but which need not necessarily be complete, is explained variously by different authors, some attributing it to cerebral anæmia, some to congestion, and others still to functional interruption of the psychic elements (Herzon and Buccola), or to disturbance in special centres (Bianchi.) Marinesco and Serieux consider it due to a phenomenon of arrest, bearing especially on the neurons of association. The stimulation of the perceptive elements induces the aura; that of both, the perceptive elements and the association elements produces automatism, pre- and post-, epileptic delirium, &c., that of the discharging neurons gives rise to the convulsions.

The cry that has been attributed by Axenfeld to fear, by

Billod to spasm of the glottis and thorax, Marinesco and Serieux attribute to excitation of the cortical laryngeal centre of Krause and Horsley. The fall is also one of the motor phenomena, and is not due to the loss of consciousness.

The pupillary immobility and dilatation is also a central phenomena, as is proved by the fact that, if the sympathetic of one side is divided, it fails on that side, while very marked on the other. It is, according to Franck, one of the most significant organic symptoms. The involuntary discharges of urine and fæces are due to the contraction of the abdominal walls, and of the musculature of the bladder and rectum. The intense cerebral congestion is considered as a vaso-motor reflex from the sensory cortex. The biting of the tongue is simply due to the spasmodic contraction of the muscles of the jaw and those pushing out the tongue. The salivation is a secretory phenomenon, and not merely the emptying of the gland. The influence of the chorda tympani is exerted by the cortex.

The later symptoms—exhaustion, transitory paralysis, aphasia, &c.—are due to the modification of the cellular elements; they are simply phenomena of nervous exhaustion. The protoplasm of the cells is incapable of its natural reaction in the centres for the paralysed functions.

Gliosis in Epilepsy.—Bleuler (*Müenchenr med. Wochn.*, Aug., 13, 1895) examined twenty-six brains of epileptics, with the view of testing the findings of Chaslin. He studied only the subpial proliferation of the neuroglia, which he found over the whole cortex, but the olivary region was not involved as claimed by Chaslin. All the patients were more or less demented, and the changes corresponded more to the degree of dementia than to the epilepsy, and he could not determine the influence of the attacks in producing the lesion. Similar lesions, more or less marked, were met with in five cases of idiocy, three of paresis, three of paranoia, and three of senile dementia, but they did not present the same regularity in the gliosis as did the epileptics. The neuroglia cells of the cortex were not increased in number, but were often pigmented. Lesions of the nerve cells were also found, but their connection with the epilepsy was not

certain. In some cases vascular lesions were present. The relation of the gliosis to the epilepsy is hard to state: it may have been a consequence instead of a cause. As all of the cases were of long duration and demented, it could not be said that the anatomic changes occurred parallel to the attacks, but the author thinks it possible.

On the whole, the investigation does not clear up the pathology of the symptom, or support especially the assumption of Chaslin—that the original lesion is apparently to be found in the neuroglia. (*Am. Journ. of Insanity.*)

The Relationship between General Paralysis and Chronic Renal Disease.—Dr. Hubert C. Bristowe concludes an interesting paper, read before the Medico-Pyschological Society, on the above subject as follows:—"The frequent presence of chronic renal disease in general paralysis, and the curious similarity of the blood vessels of the pia and cerebral hemispheres in the two diseases lead us to the question—What relation do these two diseases bear to one another? There are three possible views which are worth discussing. The first is, that the chronic renal disease is responsible for the increase of arterial tension throughout the body, and that as a result of this there is general thickening of the arteries; that the increase of tension causes increased transudation through the capillaries of the cerebrum, and that the further lesions which follow are dependent on this transudation and thickening of the vessel walls; in fact, that the kidney disease is the principal factor of all the further trouble. That this is probably incorrect is shown by the fact that in some cases of general paralysis there is no apparent sign of kidney disease, and this shows that, at all events, general paralysis must commence in many cases before the kidney trouble.

"The next view is, that an arterio-capillary fibrosis is the commencement of both diseases, in fact that they are both manifestations of a common condition. It was long ago suggested by Gull and Sutton that arterio-capillary fibrosis is a general disease of the vascular system, in which the kidneys share. Although this is not generally accepted, is it not possible after all that it may be correct?

"The third view, and one which goes hand in hand with the preceding, is, that both diseases have a common cause.

This common cause may act directly on only one set of organs—*i.e.*, the arteries and capillaries. Speaking of renal disease, Coats (*Manual of Pathology*, p. 683) says: 'We have to look for an irritant,' and further, that there are indications 'that the irritant is carried to the kidneys by the blood.' Is it not possible that the same poison which causes chronic renal disease may also induce general paralysis? Perhaps the converse of this may be more accurate. What this poison is I cannot say, nor can we be sure that more poisons than one may not produce these conditions. That in some persons chronic renal disease may be the sole result of the irritant, whilst in others general paralysis is superadded, suggests that the ordinary cause of chronic renal disease is not the ordinary cause of general paralysis, but that the poison which induces general paralysis is capable of causing chronic renal disease also.

"I do not pretend to say which of these views is correct, nor, indeed, to say that any one of them is. I only suggest them as possible and, I may add, probable explanations. The last view is the one I favour most.

"One last point which may very properly be considered is, whether the convulsions, so commonly met with in general paralysis, are uræmic in origin? Out of 41 cases, in which well-marked granular disease of the kidneys was present, only 41·5 per cent. had convulsions, whilst in the nine cases in which renal disease was apparently absent, six cases had convulsions, or 66·6 per cent. In some cases, of course, I am inclined to admit, that the convulsions may be uræmic, but in the majority of cases I doubt it.

"The main points I would then lay stress on are:—1. The frequency of contracted granular kidney in general paralysis. 2. The similarity of the changes in the blood vessels in both diseases, and the fact that they often cannot be distinguished one from the other. 3. The two diseases are curiously interdependent, and in all probability have a common origin." (*Journ. Ment. Sci.*, April, 1895).

In a further communication on the same subject (*Journ.*, July, 1895), Dr. Bristowe, in taking a general review of the facts which he had brought forward, says, "I am still able to maintain, after obtaining an increase of material, that

renal disease, of some sort or other, is exceedingly common in general paralysis. But at the same time, I must admit, that it is by no means so clear, according to statistics, that the form of renal disease is always interstitial nephritis. Still, in the majority of cases, it certainly is so, whilst in others the presence of some other gross renal lesion must mask any interstitial nephritis which might possibly be present. I have been able to show that in one case, at all events, where the presence of disease was doubtful macroscopically, it was present, however, microscopically. To be quite accurate then, in our number, a microscopic examination of the kidney, in every case, must be made. And, judging by the thickening of the arteries of the pia mater and the increased arterial tension of the larger vessels, it would be very surprising not to find some renal change. . . . . The more I consider the matter the more I am inclined to believe that the view propounded by Gull and Sutton is the correct one, or, at all events, is a correct one—*i.e.*, that there is such a disease as arterio-capillary fibrosis, in which disease the kidneys are commonly affected. I would add to that, and suggest that, under some circumstances, disease of the brain is another result, and that that disease is general paralysis of the insane.

Juvenile Paresis.—Alzheimer (*Allg. Ztschr. f. Psych.*, LII. No 3.) discusses the subject of early paretic dementia—the developmental general paralysis of Clouston and others. He analyses thirty-eight cases found in the literature, and adds fully detailed accounts of three personal observations of his own. He finds that, as regards its ætiology, syphilis plays a predominant, if not, indeed, an exclusive rôle; that hereditary predisposition seems to favour it, and traumatism may be the immediate cause of the outbreak of the symptoms. Clinically, the tendency is towards a form of chronic dementia, without delusions, though other psychic symptoms may occur, but, generally, as transient phenomena. The course and prodromal stage are rather longer than in the adult type. The paralytic symptoms generally appear early, and are prominent throughout. Hemiplegias, paralytic strokes, tabetic symptoms, optic atrophy, &c., are, relatively, rather frequent. The macroscopic *post mortem* findings are similar

to those in other forms, and the same is true of the finer lesions. In two of his own cases he found pronounced degenerative changes in the basal ganglia.

While the cases reported show many peculiar features, these are not, in his opinion, such as would authorise us to erect them into a special clinical type. Aside from the youth of the subjects, all the peculiar features are met with in different cases of paresis of older persons.

This form, however, he holds, throws a certain important light on the pathology. The usual causes, other than syphilis, to which paresis in attributed—grief, care, overstrain, the struggle for existence—fail here; the paresis occurs at an epoch when physical and psychic stress are at a minimum, and the influence of syphilis is all the more marked. The developmental changes, credited by Clouston and others, can hardly play a part as early as the ninth year (at which age some of the cases began) and, therefore, Alzheimer rejects these as an especially important factor. (*Am. Journ. of Insanity*).

The Lateral Buds of the Cortical Neurodendra in Insanity.—Dr. H. J. Berkley, in a preliminary note (*Johns Hopkins Hosp. Rep.*, Ap., 1895), reports that in certain cases of chronic alcoholism and dementia, he noticed, with the use of a new staining method—the phospho-molybdate of silver in free nitrate of silver—a diminution of the lateral buds or gemmules of the neurodendra, proceeding in well-advanced cases to a total disappearance of the short side processes. This change affected not only the large pyramidal cells, but also the smaller angular and irregular ones, and eventually ended in a lessening in size of the protoplasm of the neurodendra, besides the stripping of the buds from its sides.

This, aside from the evidence of the value of this new stain, which is especially extolled by Berkley, points to a certain importance in these buds, and is possibly a valuable addition to the pathology of insanity.

The Pathology of Milkiness, Thickening and Opacity of the Pia-Arachnoid in the Insane.—Dr. W. F. Robertson, of the Royal Asylum, Edinburgh, in a very interesting and important communication made to the Medico-Psychological Society, describes at length his researches, both into the

normal histology and structural arrangements of the layers of the pia-arachnoid, and into the changes which occur in it, in many forms of insanity. In reference to the milky and opaque condition so commonly observed, he writes:—"These changes in typical cases consist, briefly, in a slow hyperplasia of the connective tissue, and of marked proliferative changes in the endothelial cells lining the arachnoid spaces, and in those of the outer surface. The fibrous tissue may also be affected by retrograde changes. The connective tissue overgrowth is in direct proportion to the degree of milkiness and thickening. It affects the whole membrane, but the outer and less vascular parts chiefly. The new fibres tend to be thicker and coarser in structure than normal. Opacities are due to an extreme degree of this overgrowth resulting in more or less complete obliteration of the arachnoid spaces. The endothelial proliferation may be very marked, slight, or entirely absent. Like the fibrous hyperplasia, it is, when present, usually most pronounced in the outer portions of the membrane. In the great majority of cases it is a well-developed condition, and its absence is exceptional. The proliferated cells frequently form dense aggregations in the arachnoid spaces. As observed in transverse sections, they have been commonly mistaken for the small round cells of an inflammatory exudation. Their endothelial character, however, is, I maintain, beyond question. The nuclei, though often somewhat smaller, are otherwise morphologically identical with those of the normal endothelial cells of the trabeculæ and of the outer surface. This point is admitted by Ziegler for the earlier stages of the morbid process in a certain number of cases. In the more advanced stages, and in many cases from the first, he believes that there is also a small round-cell infiltration. As the result of my own observations, I differ from the latter view. In many cases, presenting an extreme degree of milkiness and opacity, I have found that the cellular elements preserve the endothelial type, and that areas of small round-cell infiltration, upon the vessel walls or elsewhere, very seldom occur. It is only in advanced general paralysis, in syphilitic insanity, and in the very rare and still obscure condition known as purulent infiltration of the pia-arachnoid, that such an aggregation of round cells is

added to the other appearances. In several cases of early general paralysis, I have found that leucocyte infiltration is absent—a fact that has important bearings upon the question of the nature of the disease. Even in some cases of advanced general paralysis, such infiltration occurs only locally and, it may be, to a very slight degree. On the outer surface, in addition to the general proliferation of the endothelial cells, there are usually very numerous minute localised aggregations. They are most pronounced in senile insanity and in general paralysis. They constitute granulations of the arachnoid. These were first described by Bayle in 1826, who speaks of them as "rounded excessively delicate asperities." Their endothelial character was recognised by Meyer in 1862. In transverse sections they appear as oval masses of cells, extending about an equal distance above and below the level of the general surface.

It has been convenient to speak first of the proliferative changes that occur in the connective tissue and endothelial elements; but even more pronounced, and, I think, of even more important significance are the degenerative changes that are found especially in the endothelial cells. These changes may frequently be observed to affect cells that have not been undergoing active proliferation. A common degenerative process is one manifested by an infiltration of the cell-plate with small yellow granules—a condition that is frequently accompanied by a degree of vacuolation. These granules are slightly darkened, but not blackened by osmic acid, and are therefore not of a fatty nature. They are lighter in colour, larger and less numerous than the granules in the normal pigment cells, which, in addition, are only found sparsely scattered in the human subject, while every cell in a large area may be affected in the way described. Therefore I conclude that this is a degenerative change in these cells, though, at the same time, it is one that may have a physiological basis in the normal pigment cells; just as in pigmentary degeneration of nerve cells the granules that replace the protoplasm are merely an increase in a normal element. The proliferated endothelial cells of the trabeculæ, and of the outer surface, may show a similar change, but their cell-plates being very small it is less prominent. The

proliferated cells of the trabeculæ are constantly being shed and carried away in the arachnoid fluid, cover-glass preparations of which always show large numbers of them, usually in a more or less shrivelled and disintegrated state. This simple breaking down into granular *débris* is probably the most common change that these proliferated endothelial cells undergo. A point of considerable importance is that osmic acid preparations, whether of sections or cover-glass specimens of the arachnoid fluids, prove that fatty changes do not occur to any great extent in this milky condition of the pia-arachnoid. The same opinion has already been expressed by Adler, though, as I have mentioned, an opposite statement is made by Ziegler.

Another type of degeneration that occurs in these proliferated endothelial cells of the trabeculæ is one that may be provisionally termed hyaline. It is probably a change closely related, if not identical with that which, in the endothelial cells of the outer surface, leads to the development of concentric bodies, of which I shall speak presently. Another, though somewhat rare, retrograde change is one that manifests itself in vacuolation and swelling up of the nucleus. It is worthy of mention here, because on the opposite side of the subdural space, in the endothelial cells of the surface of the dura, and of the dural perivascular canals, it is a common and important change. Extravasated red corpuscles and granular *débris*, resulting from their disintegration, are frequently to be observed in the arachnoid spaces. Hæmatoidin granules and crystals often occur, especially in senile insanity, in association with miliary aneurysms of the pial vessels. These morbid elements, resulting from recent or old-standing hæmorrhage, are the chief causes of the smoky or rusty tint that the arachnoid occasionally presents in the fresh state. In many cases granular *débris* of various kinds is in great abundance in the arachnoid spaces; it is probably chiefly derived from disintegration of extravasated red and white blood corpuscles, and degeneration of endothelial cells.

While all these degenerative endothelial changes already described can also be seen on the outer surface of the membrane, a very interesting further change can there be

observed in the cells that have undergone the hyaline metamorphosis of which I have spoken. It leads to the development of the concentric bodies that produce such striking appearances in many superficial horizontal sections of morbid pia-arachnoids and duras. These bodies were undoubtedly seen by Meyer in arachnoid granulations more than thirty years ago; but as far as I have been able to ascertain, Obersteiner is the only authority who has described them, though he does not do so fully. He calls them *corpora arenacea*, and believes that they are composed of carbonate and phosphate of lime. This is undoubtedly an error, as they are unaffected by dilute mineral acids. He makes no statement as to their origin. Dr. Robertson then proceeds to carefully describe these concentric bodies, and to trace their origin from endothelial cells, especially arising in the endothelial granulations already mentioned. He has never observed any disintegrative changes in these structures, and considers it doubtful if they develop from the endothelial cells of the trabeculæ.—(*Journ. Ment. Sci.*).

IV. NEUROTHERAPY.

On Thyroid Feeding in Insanity.—Dr. L. C. Bruce, of the Royal Asylum, Edinburgh, communicated to the Medico-Psychological Association, at their annual meeting in 1895, the results of the administration of thyroid extract in sixty additional cases of insanity of various types. The majority of cases chosen for treatment were unfavourable, and had all received without benefit the best dietetic and therapeutic treatment which the Asylum could give prior to the administration of thyroid tabloids. Dr. Bruce has no longer any doubts upon his mind that thyroid feeding produces a most beneficial effect in certain cases of insanity, but how this effect is produced is still largely a matter for conjecture. He proposes the following queries:—

1. Is the action due to the febrile process induced by the thyroid, and the subsequent reaction to the fever?

2. Is the thyroid extract a direct brain stimulant?

3. Does the ingested thyroid supply some material to the body which the gland is supplying in deficient quantity?

Dr. Bruce reviews these three propositions, and thus con-

cludes:—"Out of 60 cases the total number of male cases treated was 25, whose ages ranged from 20 to 55 years. Seven of these recovered, four of whom were between 20 and 25 years of age; of the remaining three, two were between 30 and 40 years, the third being 43 years of age. The total number of female cases treated was 35, whose ages ranged from 20 to 65 years. Seventeen of these recovered, the recoveries being very equally distributed from the age of 20 to 50 years." Thirteen of these recovered females were either puerperal, lactational, or climateric cases, and Dr. Bruce considers that, whatever may be the cause, these forms of insanity have given the most favourable results to the treatment. He considers that the action of thyroid is complex.

1. It undoubtedly produces a mild feverish condition, the action and reaction to which is often of considerable benefit to the patient.

2. It is a direct cerebral stimulant.

3. There is a strong probability that at some periods of life the administration of thyroid supplies some substance necessary to the bodily economy.

The treatment by thyroid extract has also been tried in America, and provisional results have been recorded by Dr. Clarke, of the Rockwood Hospital, Kingston, Ontario; Dr. Babcock, of the St. Lawrence State Hospital, New York; and by the Medical Staff of the Willard State Hospital. The observations of Dr. Clarke were published in the *American Journal of Insanity*, Oct. 1895, while the reports by Dr. Babcock and the physicians of the Willard appear in the recently issued number of the *State Hospital Bulletin*. Dr. Babcock's observations have been very carefully and fully recorded, and are accompanied by charts showing the variations in temperature, pulse, respiration, weight, sleep, &c., which accord generally with those previously noted by Dr. Bruce.

Dr. Babcock, in endeavouring to arrive at some conclusion as to the forms of insanity which afford the greatest hope of success in the treatment, makes the following classification :—

I. Cases of post-melancholia hebetude, following a lengthy period of depression, offer the best prospect of improvement, and are more or less influenced in the majority of instances.

II. Cases of stuporous melancholia of long duration are usually improved by thyroid. Cases which recover appear to have a special predilection to relapse.

III. Maniacal cases whose attacks have been unduly prolonged give a very encouraging prognosis. Recoveries in this class hold no greater prospect of permanency than recoveries without special aid. The attack has simply been cut short by the thyroid, and other things being equal a recurrence is more than probable.

IV. Cases of cerebral exhaustion following acute delirium or stupor, whose elimination of urea and other nitrogenous compounds is greatly reduced, offer a fair chance of improvement. While the majority of these cases would probably recover without the aid of thyroid, their residence in the hospital can be cut short in many instances by its judicious use.

V. Chronic disturbed cases: During the course of our observations, we have noticed that many cases of chronic mania, without fixed delusions, may be benefited by a course of thyroid treatment. In suitable cases, their maniacal outbursts may be lessened in intensity; a greater degree of self-control may be obtained, and their condition rendered more comfortable in many respects without injury to their physical health.

VI. In doubtful cases thyroid may assist in clearing up the diagnosis. It will early differentiate between true stupor and dementia. In delusional cases of a doubtful nature, a course of treatment will usually show whether delusions are fixed or temporary, as the latter will vary in character or entirely disappear during treatment, while the former undergoes no change whatever.

New Remedies in Epilepsy.—Lui (*Revista Sperimentale*, XXI., 1-2, 1895) has experimented with the Flechsig opium treatment of epilepsy, and with the Bechterew method of combining the bromides with an infusion of Adonis vernalis. During the use of the first-named method, he observed a mitigation of the disease in two cases, but an intolerance to the

treatment in the third. In ten epileptics treated by the Bechterew prescription he found generally a marked improvement, and observed no unfavourable modification of the patient's condition, while under the Flechsig treatment some of the symptoms of disordered digestion and mental torpor were frequently observed.

The Bechterew method was tried also in a rather unusual case of vagus neurosis, characterised by violent stenocardiac attacks, with laryngeal spasm and bronchial asthma, &c., with marked beneficial results during the methodical use of the method.

Experiments with borate of soda treatment were not so successful, and he does not endorse it.

Following Lui's communication is one by Guicciardi on the Bechterew method, of which the following are the conclusions:—

1. Bechterew's solution is not curative of epilepsy in itself, but does cut off, or rather much diminish the attacks.
2. It acts on these, apparently, mainly through the bromide it contains.
3. It is usually well borne by the patients, while it permits on easy tolerance within the limits of its proper dose (80 to 120 grains), and, as it appears, does not carry with it any of the common but disagreeable effects of the bromides (possibly, because with this method, the latter are given in a notably attenuated solution).
4. It is in every way more effective than borate of soda, and has none of its injurious effects on the general health, and on the digestive apparatus.
5. It can be employed also for a long time without injury or cumulative effects, or any marked diminution of therapeutic effect, the dose remaining the same.
6. It possesses, therefore, the indications of simple bromides for reducing the violence and frequency of the convulsive attacks, but can be used in preference to it when a revival of cardiac force is required, and, in cases with general debility, and by its mode of administration it may be especially useful in private practice. (*Am. Journ. of Insanity.*)

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—James Little, M.D., F.R.C.P.I.

General Secretary—William Thomson, F.R.C.S.I.

SECTION OF SURGERY.

President—Sir Thornley Stoker, President of the Royal College of Surgeons.

Sectional Secretary—Mr. Kendal Franks.

Friday, December 6, 1895.

The President in the Chair.

Operation for Extra-dural Abscess.

The Secretary, Mr. Kendal Franks, asked if Mr. R. H. Woods would favour the Section with details of the very interesting case he had shown previous to the meeting, and upon the successful treatment of which he wished to congratulate Mr. Woods.

Mr. Woods gave an account of the case of the man, aged twenty-eight, upon whom he operated for extra-dural abscess in the cerebellar fossa on the left side, complicated by thrombosis of the lateral sinus, following middle ear disease. Two days later he again trephined him and evacuated an abscess in the left tempero-sphenoidal lobe. The man made an uninterrupted recovery.

Mr. Wheeler asked several questions about the case, to which Mr. Woods replied.

Excision of Half the Larynx.

Mr. Woods then read a paper on Excision of Half the Larynx.

The case described, said to be the first of its kind in Ireland, was one of malignant disease of the larynx in a man, aged thirty-two,

whose dominant symptom was great pain in swallowing. There was no previous illness or history of syphilis; his father died of cancer of the neck. There was a tumour occupying the right half of the larynx and growing through the ala of the thyroid cartilage, so as to present externally. The glands were secondarily engaged; a piece of the tumour torn off proved to be a squamous epithelioma. Preliminary tracheotomy was performed and the right half of the larynx then raised. All the tissues from the great cornu of the hyoid bone to the arytenoid cartilage, inclusive, were removed. Two chains of glands were dissected out, a stomach tube was tied in, and the cavity plugged with iodoform gauze. The following day the temperature was 100·8° F., from whence it steadily fell to normal. The tracheotomy tube was dispensed with on the third day; on the 28th day the patient swallowed. After four months recurrence took place in a gland behind the clavicle. Its removal was attempted but without success, owing to air entering the veins. The patient died of pneumonia shortly afterwards, nearly five months after the excision.

Mr. Croly thought that filling the wound with water was the best way of preventing canalisation. The difficulty of having oxygen always at hand was very much against its use in cases of emergency, such as of air entering a vein. He was rather sceptical as to the value of oxygen in such cases. He (Mr. Croly) desired to put three questions to Mr. Woods:—1. Why he did not remove the whole larynx? 2. Why he did not use water to prevent canalisation? 3. Why he did not ligate the jugular vein before proceeding to remove the glands adherent to its walls?

Mr. Kendal Franks said Mr. Woods deserved to be congratulated on having described in a very interesting manner the details of an exceptionally brilliant operation. Unfortunately, the result was fatal, but death could not be ascribed to excision of the larynx; it was due to an extension of the disease, for the removal of which the operation had been undertaken. He believed he was right in describing Mr. Woods' case as the first undertaken in this country for the partial removal of the larynx. He had seen, in such a case, ether administered by the rectum, but the patient died within 48 hours from colliquative diarrhœa, and the *post-mortem* showed acute inflammation of the whole of the large intestine. The administration of chloroform by means of Trendelenburg's apparatus through an opening in the trachea, as performed by Mr. Woods, was far better. He entirely disagreed with Mr. Croly's view that the whole larynx should have been excised. It made a great difference to the patient whether he lost his whole larynx or only

half. Recurrence did not take place in the healthy side, but in the cicatrix, or in the glands of the neck of the affected side. Moreover, partial excision was far from being as dangerous as complete excision. Mr. Franks asked why Mr. Woods, in the second operation, did not tie the vein above and below, and remove the included portion with the adherent implicated glands.

Mr. Wheeler said that the rectal method of administering anæsthetics was not to be recommended. In one case that he had ether thus administered, the intestines became distended, pressed on the diaphragm, and considerably embarrassed breathing.

Professor Bennett thought that a great source of danger in the administration of ether by the rectum was that the ether was apt to accumulate in the intestines, and therefore the quantity given was not easily controlled.

Mr. Woods, in reply to Mr. Croly, said that his finger introduced into the wound completely controlled the vein, and prevented the further entrance of air, and was much more rapidly effectual than filling the wound with water. The immediate improvement in the condition of the patient after the administration of oxygen, suggested oxygen as perhaps the best remedy for canalisation. The implicated glands were adherent not only to the internal jugular, but also to the subclavian and innominate veins, and the condition of the patient would not permit of such a serious proceeding as ligature and excision of these veins would involve.

A Discussion of some of the Methods of Intestinal Anastomosis.

Mr. Myles, in his communication, described at length, and illustrated by a series of preparations, the methods introduced by Senn, Murphy, Mayo Robson, &c. He discussed the merits and demerits of these various methods at some length, pointing out the special circumstances which seemed to him to be factors in determining the choice of any one method in any given case. His general conclusions were that simple suture alone, where possible, was the best method for end to end anastomosis. That for gastro-enterostomy, Senn's plates, fortified by a peripheral row of Lembert's sutures, seemed most promising; that the Murphy button was the readiest method of lateral anastomosis in the small intestine, and with care might be used for end to end anastomosis in the same situation, but that especial attention should be given to the turned-in portion of the mesentery when used for this purpose; that it should not be used in the large intestine at all owing to the contents of the bowel being solid there. The operator should take

great care to use a button not large enough to stretch the wall of the gut. Mr. Myles pointed out that all the methods now in use produced as a substitute for the contractile bowel an inert tube of cicatricial tissue at the point of junction.

The PRESIDENT said that one of the great questions as yet unsettled in surgery was whether we should prefer end to end or lateral anastomosis. For lateral anastomosis he was in favour of Senn's plates. He would not care to use Murphy's button to procure anastomosis above the ileo-cæcal valve. The button made of aluminium he considered superior to others. In a case in which he used Murphy's button in the colon, the patient died of septic peritonitis, which the *post mortem* showed was due to sloughing of the intestine, extending both upwards and downwards, from the place where the button was inserted.

MR. M'ARDLE believed that by far the best method of intestinal anastomosis was by the use of Murphy's button. The statistics which he had received from Mr. Murphy himself proved this. In 76 cases treated by methods other than Murphy's, 41 died. In 12 cases that were operated on for gangrenous hernia, and where Murphy's button was used, only two deaths occurred; and in 14 cases of internal strangulation its adoption was followed by only one death. Taking 78 consecutive cases, we find there were only 10 deaths, although the list included many of great gravity. Mr. Murphy lays great stress on the necessity for closing the little triangular wound at the mesenteric border. By this means puckering is lessened and leakage prevented. A single case of stricture of the bowel following Murphy's method has not been recorded. Mr. Murphy insists on the button fitting easily into the lumen of the intestine. It should not, he says, be more than $\frac{1}{1}\frac{5}{6}$ths of an inch in diameter for small intestine. In his opinion Senn's plates were far inferior to Murphy's button. In returning the bowels into the abdomen the bowels should be placed in parallel rows, and the end containing the button should be placed most superficial.

MR. KENDAL FRANKS said that end to end anastomosis by a continuous suture was the ideal method of treatment, and should be employed in all cases where urgency was not extreme. He did not attach much importance to the material of which the sutures were made, nor to the peculiar method of suture employed; but what he thought most important was, that the sutures should be made to pass through healthy tissue. Leakage was nearly always due to placing sutures in unhealthy bowel. A large amount of intestine—three, four, or five feet—could be safely removed if necessary, and it was better to take too much than too little. In

cases of urgency, where the suture might take too long and might endanger the patient's life, he thought Murphy's button was the most useful contrivance, and deserved the place it occupied in surgery.

Mr. Croly was favourably impressed by the small experience he had of Murphy's button.

Mr. Myles having replied,

The Section then adjourned.

SECTION OF MEDICINE.

President—Thos. W. Grimshaw, M.D., President of the Royal College of Physicians of Ireland.

Sectional Secretary—A. N. Montgomery, M.R.C.P.I.

Friday, December 13, 1895.

The President in the Chair.

Exhibit.

Dr. M. M'Hugh exhibited a young man with syringomyelia.

Uncommon Symptoms in Two Cases of Throat Disease.

Dr. J. J. Burgess read a paper on this subject. [It will be found at page 101].

Dr. James Little said he had seen some cases of which Dr. Burgess' paper reminded him strongly. He thought the fact should always be kept in mind, that very severe and anomalous symptoms sometimes occur when the exanthemata (scarlet fever and measles) are about to appear. He was sure he had seen cases of this nature, in which it was impossible to make a diagnosis or to account for the violent symptoms which ushered in the illness until twenty-four hours or more had passed.

Mr. Wheeler believed that Dr. Burgess would find two cases similar to his mentioned in the *Medical Times and Gazette.* He was not sure of the date of the number containing the reports, but he believed it was one of the numbers of 1859 or 1860. As well as he could remember, one of the reports was by a Mr. Stanley. During the discussion on one of the cases a gentleman made the strange remark, that the plexus of veins external to the tonsils communicated with the internal jugular vein, and that the bleeding

was from the lateral sinus. He thought bleeding in Dr. Burgess' case was from the ascending pharyngeal artery.

Dr. J. W. Moore said they had all every reason to be grateful to Dr. Burgess for having saved a most valuable life by his untiring perseverance. Dr. Burgess had communicated to him the name of the patient, who was now a medical man in England, and an ornament to his profession. Trousseau, in his Clinical Medicine, mentions a case where violent convulsions, extending over eight days, subsided on the first appearance of the rash of scarlet fever. Trousseau's case and Dr. Burgess' he regarded as belonging to the same category.

Dr. W. G. Smith believed that the explanation of the severe hæmorrhage was the division of the vertical arteries that run in the pharyngeal folds. Those vessels cannot contract as well as other arteries, hence the severity of the hæmorrhage. As to ergot for internal hæmorrhage, except that from the uterus, he considered the drug quite useless.

Mr. Woods wished to ask Dr. Burgess if he was present at the actual time hæmorrhage took place in the first case. He considered that a vessel had been opened by an ulcerative process. He was not sure that it must have been necessarily an artery. Venous bleeding he thought was a much more serious matter than arterial bleeding. The artery can contract properly, and retreat in its sheath ; but this was not the case with veins, at least not to the same extent. He could not infer from Dr. Burgess' paper that he applied any local remedy. His experience was that local remedies are the best ; but this did not mean that the necessity of the position of the body, so as to calm the circulation, should be neglected. He did not attach much importance to the giving of food by enemata, however good a thing it appeared at first sight. He would not say that the enemata did harm. It should be remembered that it requires a greater effort on the part of the pharynx to swallow the saliva than to swallow food. Enemata were not for this reason of such advantage, on the ground of physiological rest to the pharynx. With regard to the second case he, Mr. Woods, thought that tracheotomy might have been performed with much benefit.

Dr. Burgess, in replying, thanked the Academy for the way his paper was received. In reply to Mr. Woods he said he was not present at the actual time of the occurrence of the hæmorrhage in the first case. He arrived just after it occurred. He did not see the bleeding points, and his difficulty had he used styptics was, where to apply them. With regard to the second case he admitted that tracheotomy was the proper course to be adopted.

A Case of Syringomyelia.

Dr. M. M'Hugh devoted a few introductory remarks to a brief account of the pathology and symptomatology of the affection. The term syringomyelia was now restricted to cavities produced in the cord by the liquefactive or cystic degeneration of a gliomatous neoplasm. The gliomatosis results from a proliferation of embryonic tissue remaining over in that part of the cord developmentally the weakest, viz., the posterior grey commissure and its vicinity. Schultze first pointed out the symptoms characteristic of the disease, and with an accumulated clinical experience it was now possible to diagnosticate cavities in the cord from the patient's symptoms with almost the same facility and accuracy as posterior sclerosis, in a case of locomotor ataxy. The patient exhibited, a male, aged twenty-five years, and a native of County Mayo, presented the following symptoms, viz: trophic lesions in the hands, consisting in loss of the terminal phalanx of each middle finger, with the cicatricial remains of cutaneous fissures, and transversely corrugated nails, also remarkable thickening of certain phalanges (cheiromegaly of Charcot). Muscular atrophy of the ulnar type was also present, well-marked in scapular muscles and trapezius, which showed fibrillation; faradic contractility impaired; sensory dissociation—*i.e.*, analgesia and thermo-anæsthesia, together with retention of tactile sensibility and the muscular sense, well-marked, with a wide symmetrical distribution. The patient also exhibited scoliosis, with convexity towards the right, and spastic symptoms in the lower extremities; very slight vaso-motor disturbances, and no ataxia or ocular derangements or visceral troubles. The author referred to the trophic lesions in the hands, painless whitlows with cheiromegaly, as similar to those found in Morvan's disease. The latter, however, was now considered to be only a type of syringomyelia, and the case exhibited was a true example of the disease, showing Morvan's symptom—sensory dissociation, the most remarkable feature of the disease, and difficult to explain. A study of the ascending degenerations in cases of syringomyelia continued with careful clinical records, would probably throw considerable light on centripetal conduction in the cord. Having referred to the other symptoms, the author drew attention to the remarkable symmetry in the symptoms. One might infer that there was a single symmetrically-placed cavity with a lateral wing, extending into each posterior cornu, and occupying the cervical and upper dorsal regions.

Dr. Craig remarked that the symptoms of the case were most

classical, from the fact that they occurred in a patient from twenty to twenty-five years of age, that dissociation symptoms were so well marked, that muscular atrophy attacked the upper extremity, causing weakness; and that there was spastic paralysis of the lower limbs and curvature of the spine.

Dr. Boyd congratulated Dr. M'Hugh on having presented to the Academy a most typical example of this rare form of spinal disease. Dr. Boyd drew attention to the scoliosis which is so often a marked feature in atrophy of the muscles of the shoulders and back. In Dr. M'Hugh's case the dorso-lumbar curve principally involved the left side, in contradistinction to the usual right-sided scoliosis in the dorsal region of growing youths and children. The pathology of the disease touched on by Dr. M'Hugh would point to the involvement of the posterior commissures of grey matter, principally due to the dilatation of the central canal. Why, under such circumstances, ataxy did not show itself as a more frequent symptom in these cases was not easy to explain. Possibly the ataxic symptoms had often been overlooked in the earlier stages of the disease; and we know that they often disappear when the lateral columns become involved in association with the posterior columns in other affections of the spine.

Mr. Swanzy said Dr. M'Hugh told them that in this case there were no ocular symptoms, and no doubt Dr. M'Hugh had investigated the matter. He would like to know if there was contraction of the field of vision, because that is no uncommon symptom in syringomyelia. But whether the contraction belonged essentially to the disease or whether it was of a hysterical character and only grafted on the disease, was not easy to decide. Some observers had found a peculiar neuritis in this affection, but he (Mr. Swanzy) thought it was not of common occurrence and it was not present in Dr. M'Hugh's case.

Dr. M'Hugh, in reply, said that the fact which Dr. Boyd emphasised—namely, that the scoliosis was to the left and not to the right side, was remarkable. The patient's eyes were examined by Mr. Odevaine of St. Vincent's Hospital.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.;
F.R.C.P.I.; F. R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, March 21, 1896.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Feb. 29.	Mar. 7.	Mar. 14.	Mar. 21.		Feb. 29.	Mar. 7.	Mar. 14.	Mar. 21.
Armagh -	14·0	14·0	28·0	0·0	Limerick -	12·6	11·2	25·3	28·1
Belfast -	25·9	25·9	27·3	27·1	Lisburn -	55·3	25·7	29·8	4·3
Cork -	20·1	18·0	25·6	24·9	Londonderry	18·8	26·7	25·1	22·0
Drogheda -	13·2	26·4	17·6	4·4	Lurgan -	18·2	13·7	22·8	22·8
Dublin -	26·0	22·1	27·1	24·9	Newry -	12·1	8·1	16·1	16·1
Dundalk -	16·8	4·2	25·1	12·6	Sligo -	10·2	55·8	25·4	40·6
Galway -	7·6	3·8	49·1	11·3	Waterford -	20·0	15·0	15·0	17·5
Kilkenny -	28·3	14·2	28·3	42·5	Wexford -	13·5	9·0	18·1	4·5

In the week ending Saturday, February 29, 1896, the mortality in thirty-three large English towns, including London (in which the rate was 20·3), was equal to an average annual death-rate of 20·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·5 per 1,000. In Glasgow the rate was 20·8. In Edinburgh it was 18·8.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 23·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·3 per 1,000, the rates varying from 0·0 in eleven of the districts to 4·3 in Lisburn—

the 13 deaths from all causes registered in that district comprising 1 from enteric fever. Among the 138 deaths from all causes registered in Belfast are 1 from measles, 2 from scarlatina, 5 from whooping-cough, 2 from diphtheria, and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 239—122 boys and 117 girls ; and the registered deaths to 178—99 males and 79 females.

The deaths, which are 24 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·5 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 26·0 per 1,000. During the first nine weeks of the current year the death-rate averaged 25·2, and was 7·7 under the mean rate for the corresponding period of the ten years 1886–1895.

The number of deaths from zymotic diseases registered was 15, being 7 over the low number for the preceding week, but 6 under the average for the ninth week of the last ten years. The 15 deaths comprise 2 from scarlet fever (scarlatina), 1 from typhus, 2 from influenza, 1 from whooping-cough, 4 from enteric fever, 1 from diarrhœa, and 1 from erysipelas.

Five cases of small-pox were admitted to hospital, against 1 admission in the preceding week. Two small-pox patients were discharged, and 7 remained under treatment on Saturday, being 3 over the number in hospital at the close of the preceding week.

Only 6 cases of enteric fever were admitted to hospital, being 5 under the admissions in the preceding week. Six patients were discharged, 1 died, and 56 remained under treatment on Saturday, being 1 under the number in hospital on that day week.

Fifteen cases of scarlatina were admitted to hospital, being equal to the admissions in the preceding week but 12 under the number for the week ended February 15. Fourteen patients were discharged, 2 died, and 117 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered was 38, being 13 over the number for the preceding week, but 12 under the average for the ninth week of the last ten years. The 38 deaths comprise 24 from bronchitis and 11 from pneumonia or inflammation of the lungs.

In the week ending Saturday, March 7, the mortality in thirty-three large English towns, including London (in which the rate

was 21·7), was equal to an average annual death-rate of 20·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·2 per 1,000. In Glasgow the rate was 18·2, and in Edinburgh it was 19·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 21·8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in eight of the districts to 5·1 in Sligo—the 11 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 138 deaths from all causes registered in Belfast are 2 from measles, 2 from scarlatina, 3 from whooping-cough, 2 from diphtheria, 3 from enteric fever, and 2 from diarrhœa. Among the 8 deaths in Limerick are 1 from typhus and 1 from enteric fever. The 17 deaths in Londonderry comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 181—90 boys and 91 girls; and the registered deaths to 157—78 males and 79 females.

The deaths, which are 67 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·4 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the district, the rate was 22·1 per 1,000. During the first ten weeks of the current year the death-rate averaged 25·0, and was 8·0 under the mean rate for the corresponding period of the ten years 1886–1895.

Only 11 deaths from zymotic diseases were registered, being 12 below the average for the corresponding week of the last ten years, and 4 under the number for the previous week. The 11 deaths comprise 1 from influenza, 3 from whooping-cough, 2 from enteric fever, and 2 from diarrhœa.

No cases of small-pox were admitted to hospital. In the preceding week 5 cases of the disease had been received. The 7 small-pox patients in hospital at the close of that week remained under treatment on Saturday.

Thirteen cases of enteric fever were admitted to hospital, against 6 cases in the preceding week and 11 in that ended February 22. Nine patients were discharged, and 60 remained under treatment on Saturday, being 4 over the number in hospital at the close of the preceding week.

The weekly number of cases of scarlatina admitted to hospital, which had fallen from 27 in the week ended February 15 to 15 in

each of the two following weeks, rose to 23. Twenty-one patients were discharged, and 119 remained under treatment on Saturday, being 2 over the number in hospital on that day week.

The number of deaths from diseases of the respiratory system registered was 42, being 4 over the number for the preceding week, but 14 under the average for the tenth week of the last ten years. The 42 deaths comprise 26 from bronchitis and 14 from pneumonia or inflammation of the lungs.

In the week ending Saturday, March 14, the mortality in thirty-three large English towns, including London (in which the rate was 20·6), was equal to an average annual death-rate of 20·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·6 per 1,000. In Glasgow the rate was 20·2, and in Edinburgh it was 19·0.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 26·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in seven of the districts to 4·3 in Lisburn—the 7 deaths from all causes registered in that district comprising 1 from diphtheria. Among the 145 deaths from all causes registered in Belfast are 1 from measles, 4 from scarlatina, 9 from whooping-cough, 3 from diphtheria, 2 from enteric fever, and 1 from diarrhœa. The 16 deaths in Londonderry comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 220—109 boys and 111 girls; and the registered deaths to 190—91 males and 99 females.

The deaths, which are 21 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·3 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 27·1 per 1,000. During the first eleven weeks of the current year the death-rate averaged 25·3, and was 7·5 under the mean rate for the corresponding period of the ten years, 1886–1895.

The number of deaths from zymotic diseases registered was 18, being 7 over the low number for the preceding week, but 3 under the average for the 11th week of the last ten years. The 18 deaths comprise 4 from scarlet fever (scarlatina), 3 from influenza and its complications, 2 from whooping-cough, 3 from enteric fever, and 1 from diarrhœa.

Two cases of small-pox were admitted to hospital. Nine small-pox patients remained under treatment on Saturday, being 2 over the number in hospital at the close of the preceding week.

Only five cases of enteric fever were admitted to hospital, being 8 under the admissions in the preceding week and 1 under those in the week ended February 29. Sixteen patients were discharged, and 49 remained under treatment on Saturday, being 11 under the number in hospital on that day week.

Thirty cases of scarlatina were admitted to hospital, against 23 in the preceding week. Fifteen patients were discharged, 1 died, and 133 remained under treatment on Saturday, being 14 over the number in hospital on that day week.

Deaths from diseases of the respiratory system, which had risen from 38 in the week ended February 29 to 42 in the following week, fell to 33, or 19 below the average for the corresponding week of the last ten years. The 33 deaths consist of 24 from bronchitis, and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, March 21, the mortality in thirty-three large English towns, including London (in which the rate was 18·8), was equal to an average annual death-rate of 19·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·6 per 1,000. In Glasgow the rate was 20·4, and in Edinburgh it was 17·9.

The average annual death-rate in the sixteen principal town districts of Ireland was 24·3 per 1,000 of the population.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 1·8 per 1,000 the rates varying from 0·0 in eleven of the districts to 9·4 in Kilkenny—the 9 deaths from all causes registered in that district comprising 2 from diarrhœa. Among the 144 deaths from all causes registered in Belfast are 3 from measles, 4 from scarlatina, 9 from whooping-cough, 1 from simple continued fever, 2 from enteric fever, and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 191—98 boys and 93 girls; and the registered deaths to 170—82 males and 88 females.

The deaths, which are 48 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·4 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 24·9 per

1,000. During the first twelve weeks of the current year the death-rate averaged 25·3, and was 7·5 under the mean rate for the corresponding period of the ten years, 1886–1895.

The number of deaths from zymotic diseases registered was 17, being 6 below the average for the corresponding week of the last ten years, and 1 under the number for the previous week. The 17 deaths comprise 1 from scarlet fever (scarlatina), 6 from influenza and its complications, 2 from whooping-cough, 3 from diphtheria, and 1 from enteric fever.

Two cases of small-pox were admitted to hospital, being equal to the admissions in the preceding week. One small-pox patient was discharged, and 10 patients remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

The number of cases of enteric fever admitted to hospital was 9, being 4 over the admissions in the preceding week, but 4 under the number admitted in the week ended March 7. Five patients were discharged, and 53 remained under treatment on Saturday, being 4 over the number in hospital on that day week.

Thirty-two cases of scarlatina were admitted to hospital, against 30 in the preceding week and 23 in that ended March 7. Twenty-five patients were discharged, and 140 remained under treatment on Saturday, being 7 over the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered was 30, being 26 below the average for the corresponding week of the last ten years, and 3 under the number for the previous week. The 30 deaths comprise 17 from bronchitis and 9 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of March, 1896.

Mean Height of Barometer,	29·750 inches.
Maximal Height of Barometer (on 31st at 9 a.m.),	30·242 „
Minimal Height of Barometer (on 3rd, at 1 p.m.),	28·593 „
Mean Dry-bulb Temperature,	44·6°.
Mean Wet-bulb Temperature,	42·4°.
Mean Dew-point Temperature,	39·8°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·246 inch.
Mean Humidity,	83·7 per cent.
Highest Temperature in Shade (on 24th),	58·5°.
Lowest Temperature in Shade (on 27th),	34·1°.
Lowest Temperature on Grass (Radiation) (on 18th),	29·9°.
Mean Amount of Cloud,	57·8 per cent.
Rainfall (on 23 days),	3·310 inches.
Greatest Daily Rainfall (on 17th),	·500 inch.
General Directions of Wind,	W., N.W.

Remarks.

A changeable, wild, and very rainy month. The general distribution of atmospheric pressure was cyclonic. Temperature, although on the whole markedly above the average, was very unstable, and some sharp fluctuations were observed. The rainfall was rather more than 60 per cent. in excess of the average, but this did not make up for the deficiency in the two previous months, and the quarter closed with the rainfall still 23·6 per cent. short of the normal amount.

In Dublin the arithmetical mean temperature (46·1°) was three degrees above the average (43·1°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 44·6°. In the thirty years ending with 1894, March was coldest in 1867 and 1883 (M. T. = 39·0°), and warmest in 1893 (M. T. = 48·1°), and in 1868 (M. T. = 47·3°). In 1895 the M. T. was 44·1°.

The mean height of the barometer was 29·750 inches, or 0·166 inch below the corrected average value for March—namely, 29·916 inches. The mercury rose to 30·242 inches at 9 a.m. of the 31st, and fell to 28·593 inches at 1 p.m. of the 3rd. The observed range of atmospheric pressure was, therefore, 1·649 inches—that is, almost an inch and seven-tenths.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 44·6°, or only 0·3° above the value for February, 1896. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*min.* × ·485), the M. T. becomes 45·9°. The arithmetical mean of the maximal and minimal readings was 46·1°, compared with a twenty-five years' average of 43·1°. On the 24th the thermometer in the screen rose to 58·5°—wind, S.; on the 27th the temperature fell to 34·1°—wind, W. The minimum on the grass was 29·9° on the 18th.

The rainfall was 3·310 inches, distributed over 23 days. The average rainfall for March in the twenty-five years, 1865–89, inclusive, was 2·061 inches, and the average number of rainy days was 16·5. The rainfall, therefore, and also the rainy days, were considerably above the average. In 1867 the rainfall in March was very large—4·972 inches on 22 days. On the other hand, in 1871, only ·815 inch was measured on 12 days, and in 1893 only ·288 inch on 8 days. The smallest March rainfall was ·288 inch on 8 days in 1893. In 1895, 2·748 inches fell on 19 days.

The atmosphere was more or less foggy in the city on 6 days—viz., the 7th, 10th, 19th, 21st, 22nd, and 25th. High winds were noted on 17 days, reaching the force of a gale on ten occasions—the 1st, 2nd, 3rd, 6th, 8th, 15th, 16th, 17th, 26th, and 28th. Snow or sleet occurred on the 3rd, 4th, and 28th; and hail fell on the 1st, 2nd, 3rd, and 28th. The temperature exceeded 50° in the screen on as many as 21 days, compared with 13 days in 1895, 22 days in 1894, 26 days in 1893, only 7 days in 1892, 9 days in 1891, and 19 days in 1890. It never fell to 32° in the screen. In March, 1892, frost had occurred in the shade on as many as 16 nights. The minima on the grass were 32°, or less, on 8 nights, compared with 10 nights in 1895, 12 in 1894 and 1893, 25 in 1892, 20 in 1891. and 16 in 1890. The thermometer never rose to 60° in the screen, and never failed to reach 40°. In March, 1892, the thermometer did not rise to 40° in the screen on 9 days. A solar halo was seen on the 27th, and a lunar halo appeared on the 23rd. Brilliant aurora borealis occurred on the night of the 4th.

Exceedingly broken, wet, squally weather ushered in the month of March and held throughout its first week. On four days the wind reached gale force in Dublin, and rain, sleet, and hail fell freely. A brilliant display of aurora borealis was seen on the evening of Wednesday, the 4th. Thunder and lightning occurred in several places in connection with a deep atmospheric depression on Tuesday and Wednesday. On Sunday morning a depression of some intensity (29·06 inches) was central in the Shetlands. It

caused westerly gales and showers of rain and hail in most districts. A progressive reduction of pressure went on in the N. and N.W., so that by 8 a.m. of Tuesday the barometer fell to 28·33 inches at Wick and Sumburgh Head, to 28·39 inches at Malin Head, and to 28·51 inches at Belmullet. Even in Dublin the reading was as low as 28·59 inches at 1 p.m. In the afternoon, 28·28 inches was recorded at Sumburgh Head. Fresh westerly (between S.W. and and N.W.) gales prevailed; and rain, hail, sleet and snow fell at intervals, the Dublin Mountains being deeply snow-covered. Occasional thunder and lightning were at this time reported from various stations—particularly in the West of Ireland, the English Channel, and the South of England. In Dublin the barometer remained below 29 inches from 8 p.m. of Monday to 4 p.m. of Wednesday—that is, during 44 hours. With a brisk recovery of pressure during Wednesday night, temperature also rose fast, and rain took the place of hail and sleet. In Dublin the mean atmospheric pressure was 29·373 inches, or ·801 inch below the value for the previous week. The barometer fell to 28·593 inches at 1 p.m. of Tuesday (wind, W.S.W.), and rose to 29·957 inches at 9 a.m. of Saturday (wind, S.E.). The corrected mean temperature was 44·2°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 43·4°. The screened thermometers fell to 34·9° on Tuesday and rose to 54·6° on Saturday. Westerly winds predominated. The rainfall was 1·079 inches on seven days, ·350 inch being measured on Saturday.

The week ended Saturday, the 14th, witnessed a continuance of the unsettled, dull, rainy weather which had prevailed from the beginning of the month. Both atmospheric pressure and air temperature were very unsteady, and the wind also was extremely variable in direction. The general tendency was for high barometer readings to develop in the extreme north and also over the Iberian Peninsula, while a succession of depressions of no great intensity moved slowly eastward or southeastward across the intervening districts—the South of Scandinavia, the British Isles, and Central Europe. Hence the changeable weather of the period. On and after Wednesday a severe snowstorm prevailed in Sweden, while large quantities of rain had fallen in Southern Germany at the beginning of the week—at Munich, 1·78 inches of rain were measured on Sunday morning, 1·10 inches on Monday, and 0·79 inch on Tuesday at 8 a.m.—a total fall of 3·67 inches in 3 days. On Sunday the thermometer rose to 58° in Dublin, 59° at York and Cambridge, and 61° at Loughborough—59° was again reached at Loughborough and Oxford on Wednesday, but towards the close of the

week a general reduction of temperature was taking place, consequent on the setting in of northerly and north-easterly winds. Very little sunshine was enjoyed. On Tuesday, however, 7 hours were registered at Cambridge and 8½ hours at Eastbourne. In Dublin the mean height of the barometer was 29·976 inches, pressure ranging between 30·213 inches at 9 a.m. of Tuesday (wind S.) and 29·791 inches at 9 p.m. of Friday (wind N.N.W.). The corrected mean temperature was 47·1°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 46·1°. On Sunday the screened thermometers rose to 57·7°; on Tuesday they fell to 35·2°. The rainfall was ·682 inch on five days, ·226 inch being measured on Monday.

Once more the record is of changeable, squally, rainy weather during the week ended Saturday, the 21st. The sky, however, was not so densely clouded as in previous weeks, and on Monday, Wednesday, and Thursday much bright sunshine was enjoyed. The distribution of atmospheric pressure was almost continuously cyclonic—on Wednesday night, indeed, "a wedge" of relatively high pressure did move eastward across Ireland, causing a spell of beautiful weather, but it was soon followed by another series of depressions. The most serious disturbance of the period lay off the North of Ireland on Monday morning, when the barometer was down to 28·76 inches at Malin Head, the reading at the same time (8 a.m.) being 29·70 inches at Valentia Island, aud 29·67 inches at Roche's Point, Cork Harbour. Gradients for westerly to north-westerly winds were, therefore, very steep over Ireland and strong gales from the points named prevailed, with showers of rain and hail in some places, but a very dry air generally. Tuesday was wet owing to the arrival of new disturbances. On Wednesday the weather was bright in Ireland, but very wet in the South of England in connection with the passage eastward of a large V-shaped depression and several lesser cyclonic systems, in which singular contrasts of temperature were observed. On Thursday afternoon cirrus cloud spread over the sky from S.W. in Ireland, and the weather quickly fell again into an unsettled, rainy condition, so continuing to the end of the week. Thunder and lightning occurred in the N.W. and N. of Ireland on Friday. In Dublin the mean height of the barometer was 29·663 inches, pressure ranging between 29·390 inches at 7 15 a.m. of Monday (wind W.) and 29·885 inches at 9 a.m. of Thursday (wind S.W.). The corrected mean temperature was 46·0°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 44·5°. On Wednesday the screened thermometers fell to 34·9°, on Friday they rose to 56·5°.

The rainfall was 1·011 inches on five days, ·500 inch being registered on Tuesday. The prevalent winds were W. and S.W.

"March many weathers"—thus may the week ended Saturday, the 28th be most fitly described. At the beginning "the south wind blew softly," and fair summerlike weather was enjoyed. On Sunday the thermometer in the shade rose to 68° in London, and 67° at Cambridge. At the latter place a thunderstorm occurred in the evening. The weather was beautifully fine in Dublin also until Wednesday, at 6 p.m. of which day rain set in. Already on Tuesday a large, but shallow V-shaped depression had caused thunder and lightning in many parts of England and Wales. On Thursday morning the centre of a still larger and deeper depression was found lying over the north of Scotland. It caused strong, squally S.W. to N.W. winds and showers, or continuous rain in some places, especially Liverpool and its vicinity. The wind soon backed, and on Thursday afternoon a deep secondary cyclonic system travelled rapidly eastwards over the middle of Ireland, afterwards crossing the Irish Sea, England, and the North Sea, with such speed that it was central off the Helder at 8 a.m. of Friday. Its centre passed close to Dublin at 6 p.m. of Thursday, so that it travelled at the uniform rate of upwards of 30 miles an hour for 14 hours—the distance being some 440 miles in a direct line. The atmosphere remained in a very disturbed state to the close of the week, and on Saturday hail, sleet, and snow fell heavily at intervals. In Dublin the mean height of the barometer was 29·815 inches, pressure ranging between 29·384 inches at 6 p.m. of Thursday (wind, W.S.W.), and 30·094 inches at 9 a.m. of Friday (wind, W.). The corrected mean temperature was 46·5°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 44·3°. On Tuesday the shade maximum was 58·5°, on Friday the shade minimum was 34·1°. Rainfall was ·501 inch on four days, ·194 inch being registered on Friday. Hail, sleet, and snow fell on Saturday. The prevailing winds were S.W. and W.N.W. A lunar halo was seen on Monday, a solar halo on Friday.

Cloudy, mild, somewhat showery weather prevailed during the closing days of the month—29th to 31st, inclusive.

The rainfall in Dublin during the three months ending March 31st amounted to 4·898 inches on 47 days, compared with 9·084 inches on 52 days in 1895, 6·028 inches on 53 days in 1894, 5·196 inches on 49 days in 1893, 4·808 inches on 48 days in 1892, only 1·650 inches on but 32 days in 1891, 7·470 inches on 45 days in 1890, and a twenty-five years' average of 6·411 inches on 51·0 days (1865–1889, inclusive).

At Knockdolian, Greystones, Co. Wicklow, 2·796 inches of rain fell on 25 days during March; and the total rainfall since January 1, 1896, equals 4·736 inches on 42 days. The corresponding figures for 1895 are 3·140 inches on 20 days, the total rainfall since January 1 having been 10·095 inches on 44 days.

The rainfall in March at Cloneevin, Killiney, Co. Dublin, was 2·61 inches on 23 days, compared with 3·29 inches on 21 days in 1895, 1·11 inches on 14 days in 1894, ·26 inch on 9 days in 1893, ·98 inch on 10 days in 1892, and a ten years' average of 1·658 inches on 13·9 days. The maximum in the 10 years was 3·59 inches in 1888, the minimum was ·26 inch in 1893. At this station the total rainfall since January 1, was 4·25 inches on 42 days, compared with a fall of 9·68 inches on 52 days in the first quarter of 1895, and 5·56 inches on 55 days in that of 1894.

THE NURSING NEWS.

The Nursing News and Hospital Review seems to illustrate the effects of indigestion. In October it swallowed the *Popular Medical Monthly* and the *Nurse*, and assumed a more comprehensive name. This, and a subsequent nomenclature, had to be abandoned, and the *Nursing News and Hospital Review* represents the final transformation. It professes to represent the nursing profession and to be a "journal for trained nurses and the medical profession." In the same wrapper we find a number of a magazine called *Childhood:* but whether this is a constant or only an occasional accompaniment does not appear. The journal is in form and matter a good pennyworth, but we hesitate to endorse the opinion to which we are referred by "*vide* PRESS," "that it is the most instructive and readable journal issued."

THE INTERNATIONAL MEDICINE.

THE *International Medicine* is somewhat of a curiosity, being an English periodical, printed and published in Paris. The language shows slight traces of its French domicile—*e.g.*, "medecine" and "therapeutique:" and the following "testimonial of the month of feruary":—"With much pleasure, I am very happy to tell you that all your produces have given me most wonderful results on the patients. I gave them to many compliments." The price is "one penny."

PERISCOPE.

DELANOY.

We learn from a quotation in the (Paris) *Indépendance Médicale* that this ingenious patient—we trust his real name is not "Delany"—will cease to frequent the Paris hospitals for the next four years; having been sentenced to imprisonment. In 1883, he was treated by Charcot, at the Salpêtrière, for ataxic symptoms. In 1884, Dr. Gallard had him at the Hôtel Dieu, for three months. In 1885, he spent four months in the Necker, where he underwent most energetic treatment—powerful cauterisations along the spinal column, at the hands of Dr. Rigal—without improvement. In 1886, at the Laënnec, Dr. Ball tried nitrate of silver, belladonna, and morphin, with no better success. In 1888 he was pronounced incurable, by Dr. Ferréol, at the Charité, and advised to go to Bicêtre. He preferred the Cochin, and Dr. Dujardin-Beaumetz, who hung him up—unfortunately not by the neck—for two months, "sans le moindre succès." There seemed to be nothing left but Lourdes. Here he arrived on the 19th August, 1889, and in two hours his cure was complete. "After having prayed for a length of time before the grotto, he starts up briskly and light as a chamois, throwing away his crutch, starts to run, jostling the astonished pilgrims." Post-office orders poured in upon him, and letters asking for his intercession. He returned to Paris, resumed his celebrated ataxic *rôle*, and was ultimately convicted of malingering.

TOBACCO.

A recent issue of the *American Practitioner and News* puts prominently forward a tremendous counterblast to tobacco, by Dr. R. B. Gilbert, of Louisville University. The following extract, with which the article opens, may be considered as his text:—"The Louisville Conference of the Methodist Episcopal Church, South, at their recent annual meeting, upon the recommendation of the Committee on Temperance, passed a resolution, by a small majority, condemning the use of tobacco among its members. While the resolution was under discussion quite a number of the reverend gentlemen undertook to defend the use of tobacco, stating that 'it is a great comfort, and that its use just before preaching a sermon helped them to preach better by stimulating the nervous system and brightening the intellect.' A certain presiding elder, who is

himself a slave to the 'seductive weed,' made quite a lengthy speech in defence of the filthy and disgusting habit." The doctor's views are expressed in another extract, as follows:—"Talk of distilling the essence of Christianity through quids of tobacco! How can a preacher dare to stand up before the altar of God and attempt to dispense the sweet savour of Gospel truth with his tongue reeking in loathsome poison? I have no patience with a so-called 'temperance man' who appeals to a 'drinker' with his mouth full of tobacco. The drinker, if he is not a chewer, is the more temperate of the two."

DEAD CHINAMEN AS FREIGHT.

A CURIOUS freight which is shipped exclusively from San Francisco to China is "fish-bone," which pays 20 dols. a ton. It is sent in large boxes consigned to the Tung Wah Hospital at Hong Kong, but the contents of the boxes are really the bodies of dead Chinamen sent home for burial. Most of the Chinamen who come to the United States are under the care of the Six Companies, who sign a contract guaranteeing to return the bones of the dead for burial with their ancestors in the Celestial Empire, and the Tung Wah Hospital acts as the agent on this side in carrying out the agreement. They are shipped as "fish-bones" in order to evade the rule of the steamship companies, who charge full first-class passenger rates for the dead. Nearly every ship leaving San Francisco for China carries among the steerage passengers a number of invalids who hope to live until they reach their native country, but several usually die on every voyage. There is an agreement between the steamships and the Six Companies which forbids the burial of these bodies at sea, and the latter furnishes coffins of the peculiar Chinese pattern for use in such emergencies. They are made of slabs, the first cut of the log, so that the sides and bottom and top are rounded. A dozen or more are carried on each ship, and the surgeon is furnished with a supply of embalming fluid. When a Chinaman dies at sea, the surgeon embalms the body, which is then placed in a coffin, sealed up, and lowered into the hold. The expense is paid by voluntary contributions from the other Chinese passengers, the crowd, and the stewards of the ship—all of whom belong to that race. No subscription paper is passed around, but a pan containing Chinese sugar is placed beside the coffin, and every Chinaman on board drops in his contribution, from a dime to a dollar, and takes a piece of sugar from the pan, which is supposed to bring him good luck and prolong his life. When the ship reaches Hong Kong, the coffins and the belongings

of the dead are delivered to the Tung Wah Hospital, which disposes of them to the surviving friends in China. Every Chinaman in the United States is supposed to be registered at the Tung Wah Hospital and with the Six Companies at San Francisco.—*Med. Rec.*

THE MONTREAL MEDICAL JOURNAL.

THIS monthly record of the "Progress of Medical and Surgical Science," is in its 24th volume. Like many other transatlantic periodicals, it contrasts favourably in paper, printing, and price with European products. The contents are of the average quality. We quote one passage from a paper by Dr. C. L. Prevost, of Ottawa—A Trip amongst the Gynæcologists of New York—on the undecided question of ether *v.* chloroform. "With regard to anæsthesia, in all the hospitals of New York ether is used, administered in a cone covered with a towel. I saw Clover's inhaler used at the German Hospital only, and a modified apparatus at that, provided with a tap at the superior part through which fresh air was allowed to penetrate without removing the mask from the face. Dr. Boldt, at St. Mark's Hospital, is the only one who sticks to chloroform, at least such was his practice when I first met him in 1893. 'You are using chloroform,' I said to him one day; 'have you never had any accidents with it?' 'Yes,' said he, 'I had one case of death with chloroform, but I had two with ether.'"

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"*Soloids*" *of Carbolic Acid.*

MESSRS. BURROUGHS, WELLCOME, & Co., of Snow Hill Buildings, London, E.C., have submitted for our consideration an important addition to their list of "soloids" of compressed antiseptics. A safe and convenient method of carrying definite quantities of undiluted carbolic acid, ready for the instant preparation of the many antiseptic solutions used in surgical, gynæcological, and sanitary work, has long been a desideratum; and we feel sure that the new "soloids" will meet this great want.

These "soloids" are supplied in bottles of 25 and 100 each, contain exactly 5 grains each, and are made of a characteristic shape and colour to distinguish them from "tabloids" intended for internal administration. The distinctive grass-green colour is communicated to the liquid in which they are dissolved, so that it cannot be confused with any other solution in general use at the operating table or in the sick-room.

For use as an escharotic one "soloid" may be held in a small piece of cotton wool and gently rubbed over indolent and foul ulcers or applied for the removal of growths. Dissolved in five ounces of water, one "soloid" makes a solution suitable for use as a disinfectant or antiseptic spray for application to the mucous membranes of the mouth, pharynx, larynx, nasal cavities, and so on.

A "Soloid."

A "Tabloid."

The accompanying illustration shows the distinguishing shapes of "soloids" and "tabloids." Only to the hybrid etymology of these copyright terms can any exception be taken by the most captious critic.

Lactopeptine Tablets.

At this time of day, it is not necessary to enlarge on the many virtues of "Lactopeptine" as a digestive agent. Mr. John M. Richards, 46 Holborn Viaduct, London, E.C., whose specialty this preparation is, with an unwonted candour which is as refreshing as it is commendable, supplies us with the formula. "Lactopeptine powder" is composed of 40 ounces of sugar of milk, 8 ounces of pure pepsin, 6 ounces of pure pancreatin, 4 drachms of vegetable ptyalin or diastase, 5 fluid drachms of lactic acid, and 5 fluid drachms of hydrochloric acid. It will be observed from this analysis that lactopeptine contains the five active agents of digestion, combined in the same proportion as they exist in the human stomach. It is claimed for the preparation, and not without good reason, that it will digest food in a manner identical with that of the natural gastric juice. The dose of lactopeptine is ten to fifteen grains after each meal, to be taken in water, wine, or other beverage, if preferred.

An elegant form for the administration of lactopeptine is the tablet. We have before us a one-ounce bottle filled with beautifully prepared 5-grain tablets, each of which bears the inventor's initials clearly stamped upon it. The tablets are pleasant to taste and may be sucked in the mouth until dissolved, like any other lozenge. Adults may take 2 to 4 tablets, after each meal; for children the dose is one or two tablets, and they will readily take them because of their peculiar yet agreeable taste—slightly sweet and moderately tart.

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

JUNE 1, 1896.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XXIX.—*The Harrogate Treatment.* By ALBERT MOUILLOT, M.D. (Dub.).

As each season comes round one cannot help being forcibly impressed by the enormous number of Irish visitors who are attracted to Harrogate. The visitors' list abounds in well-known Irish names, and the familiar accents are heard in all directions at places where people congregate.

Though Harrogate is a fairly lively place, and the country around it interesting, it cannot be pretended that its attractions, from a holiday point of view, so far surpass those of other resorts as to account for the preponderating Irish element, so there must be something in the air of the place and its influence on the health, which, in addition to its waters and baths, appeals to the Irish constitution.

A brief, practical account of Harrogate cannot, therefore, fail to be of interest to the Irish medical practitioner.

Harrogate is situated on a table land at from 350 to 450 feet above sea level. It is as far away from the sea as it is possible to get in the north of England, and, surrounded by moorland, has neither forest, river, nor mountain in its vicinity. As a consequence of its position the climate is very bracing and the atmosphere singularly dry. As the majority of the Irish population live near the sea and in

damp, low-lying districts, it is evident that they get in Harrogate a "change of air" in the best sense of the term, and, going home invigorated, send their friends next year.

I think the bracing nature of the climate accounts for the presence of the large class of people from Ireland who come here without medical advice and with no intention of taking the waters. That the climate is healthy is proved by the death-rate being only 13·7 per 1,000 on the average for seven years, and the fact that so many people leave delicate children here at boarding-schools is evidence of the general belief in Harrogate air for toning up the system.

Enough has been said as regards Harrogate as a health resort. As a medical spa Harrogate suffers considerably by its great reputation for sulphur water. This may sound a paradox, but nevertheless the fact is that the medical profession and public, knowing of the presence in Harrogate of the strongest sulphur water in existence, forget that sulphur is only one ingredient in the waters which contain it, and that many of the waters are quite free from any trace of it. The consequence is that to many doctors Harrogate is only known as a place to send cases suffering from diseases likely to benefit from sulphur, and Harrogate only occurs to their minds in connection with chronic rheumatism and skin diseases. The best results of Harrogate treatment are not by any means confined to those diseases, and even if the sulphur were removed by a chemical process the waters would remain of sufficient therapeutic use to attract health-seekers from all parts.

There are in all 80 kinds of medicinal waters in use at Harrogate, and that they should be available in such a bracing district is both unusual and fortunate, as the character of the climate tends to check the lowering tendency of the spa treatment. Patients almost invariably feel surprised at feeling so brisk after their course, particularly if they have had a previous experience of certain other spas. The appetite increases, and so generally does the body-weight in spite of the treatment, this good result being in the main due to the freshness and purity of the air. Though, as I said, there are 80 wells in Harrogate, I will confine myself in this paper to four or five of those most frequently administered.

The most popular is undoubtedly the "Old Sulphur" well. It is a powerful saline sulphur water, containing total solids amounting to 1,047 grains per gallon. The bulk of the solids are chlorides in combination with sodium (893 grains), magnesium (48·2 grains), calcium (43·6 grains), potassium (9·5 grains), barium (6·5 grains). It will be noticed that the saline constituents are such that even were the sulphur ingredients removed there would remain a powerful saline capable of doing all that such waters can do elsewhere; but, in addition, there is present sulphhydrate of sodium (5·2 grains) and carbonate of magnesium (5·9 grains), making a combination which is almost unique. The water also contains 10·16 cubic inches of sulphuretted hydrogen, to which free gas the odour is of course due. Its taste is by no means as unpleasant as its smell, intense saltness being the noticeable feature.

Like all the other Harrogate waters, the "Old Sulphur well" is cold, but is usually administered hot. The heating is effected by means of an arrangement under the pump-room called a therma, which consists of a chamber of heated coils of pipes, around which the sulphur water passes. There is no hot water added, nor is there any appreciable loss of the free gas. Two doses of this water are usually taken before breakfast, and the result desired in most cases is free evacuation of the solid matter contained in the bowels followed by a loose watery motion. Nothing more than this is usually aimed at, the general rule being to be satisfied with the two motions, both of which should be early in the morning. Excessive purgation is not desirable. At stated hours in the forenoon and afternoon the patient is instructed to take one of the other milder waters cold. The effect of the cold waters is not laxative in the quantities ordered, but the kidneys are acted upon, and the alterative effect of the sulphur water saline is produced. The favourite waters for these purposes are the "mild sulphur" and "magnesia." Though called mild sulphur it is mainly in the degree of impregnation with chlorides that its mildness consists, there being only a fractional difference in the amount of sulphur. The magnesia water, however, contains only ·707 grains of sulphur, and though containing less chlorides, on the whole, than the mild

sulphur, has more of the potassium chlorides than any of the others (28 grains to the gallon).

In addition to the sulphur saline groups Harrogate possesses iron salines of great value. In them iron takes the place of sulphur. The most celebrated one is known as the Montpelier Kissingen, its total solids amounting to 875 grains, the chlorides being responsible for the greater part. The sodium salt is represented by 674 grains, magnesium by 65 grains, calcium by 87 grains, and the potassium by 21. The iron occurs in the form of ferrous carbonate, and is present to the extent of 9·5 grains. The Kissingen is given in the same way as the Old Sulphur, and has a similar though not so powerful an effect on the intestinal canal. As a tonic alterative it may be given cold during the day, or the hot morning doses may be followed later in the day by one of the other iron waters. Either the "Alexandra" or "Chloride of Iron" waters are used for this purpose. The former contains 6 grains of ferrous carbonate with chlorides to 218 grains, whilst the latter, the most powerful of the iron waters, contains solids 465 grains, of which iron is represented by 24 grains, almost equally divided between the ferrous chloride and carbonate. These iron salines are very useful, either as tonic substitutes for or additions to a full course of sulphur waters. From the constitution of the waters it can be deduced that the laxative effect is due to the salines aided by heat, and in the case of the Old Sulphur well by magnesium carbonate. The result is due to stimulation of the intestinal tract by direct action on the mucous membrane or through the nervous influence, or, as is most probable, by both combined. The absence of sulphates in the waters should be noted.

In addition to the waters used internally, Harrogate is well equipped with baths of all kinds, which are made use of during the treatment for various reasons. The reclining sulphur bath has been used for many years as part of the treatment of gout, rheumatism, and skin diseases, and it is still popular; but of late years the massage douche has been largely used. It is given on the Aix-les-Bains system by men trained there. In this bath the patient is seated on a chair whilst a continuous spray of hot water plays upon his

back. The masseur carefully kneads the muscles of the limbs and trunk, paying special attention to any particular parts when ordered by the medical attendant. Whilst manipulating, the masseur carries a pipe over his arm out of which hot water flows. The bath is concluded by a needle bath. The duration is about twenty minutes. This treatment has a special reputation in cases of high arterial tension.

The latest addition to the bathing system is the "carbonated sulphur," which is an ordinarily reclining bath artificially aerated by Sandow's tabloids. It is an imitation of the well-known Nauheim bath, and, in conjunction with the resisted movements designed by Schott, is used in the treatment of various forms of heart disease. Whether the aeration of the bath increases its effect on the capillaries of the skin I am not prepared to say, but, at all events, it enables one to give the sulphur baths at a lower temperature than would otherwise be desirable. As regards this special treatment for heart disease, I am prepared to give it my cordial approval in suitable cases. The most suitable cases are, in my opinion, those of failing cardiac compensation with dilatation. These cases are usually accompanied by a rapid and irregular pulse, due, I believe, to insufficient emptying of the heart at each contraction. What the Schott movements do is to enable the heart to empty itself completely. The movements call upon the heart for increased exertion, at the same time lowering the arterial tension, so diminishing the peripheral resistance. They act like a combination of nitro-glycerine and digitalis, except that the improvement in the muscle is more permanent. I fancy the complete emptying of the hollow viscus accounts for the reduction of the area of cardiac dulness which has caused so much controversy lately. However one may differ as to the cause, the fact that a heart beating 100 times per minute can often be reduced to one beating 80 times a minute, after a quarter of an hour's exercise, is beyond dispute. In addition to general baths, there is, of course, every kind of local douche, &c., in general use.

The Corporation are now expending £100,000 on new baths, a large section of which will be opened on June 1st. I have recently had the privilege of going over the new

building minutely, and I may say that the Corporation and architects have left nothing to be desired. The new suite of baths is amongst the finest in the world, being replete with every convenience known to scientific balneology. In addition to the baths and waters, there are places where massage and electric treatment can be carried out, and houses for Weir-Mitchell treatment, &c., so that modern Harrogate is well to the fore in the attempt to take full advantage of its natural resources.

Having now briefly, and I fear baldly, described the climate, waters, baths and the general arrangements of Harrogate, I shall endeavour to indicate the class of case suitable to the treatment.

It would be easy to lay before you a long list of chronic diseases likely to receive benefit here, but the name of the disease would be very little guide in the selection of suitable cases. It is not so much the disease itself as the condition of the individual patient suffering from it that one should look to when considering the question of Harrogate treatment. I would, therefore, prefer to lay down some general rules for selection of cases rather than to name diseases individually:—

1. Cases convalescent from acute diseases, or those run down, requiring rest and change, may be sent to enjoy the bracing air, with or without taking any of the tonic waters.

2. Cases of anæmia in which the state of the digestive organs renders the ordinary course of iron inoperative may come to try the effect of iron in its natural combinations.

3. Patients whose diseases, caused or conditioned by the retention in the blood or tissues of one or other of the products of defective metabolism, receive benefit from the sulphur salines and baths, as the various organs concerned in their elimination are kept in full activity during the course. In gout and rheumatism the specific effect of sulphur aids in the cure. The course may be taken either to remove the poison already working mischief in the tissues, or when the tendency to accumulate the poison is known to exist, to get rid of it periodically as a prophylactic measure before any evil has arisen. An eliminatory course once a year tends to prevent explosions of gout and rheumatism.

4. The Harrogate treatment may be given with advantage to a patient who, having recovered from an acute articular inflammation, remains with one or more joints crippled. The massage bath is an important feature in the treatment of such cases.

5. The action of the waters on the alimentary canal, coupled with the well-known fact that patients attend much more carefully to diet at a spa than at home, points out the treatment as likely to be successful in all cases of catarrhal conditions of the intestinal canal, whether caused by too good living or otherwise. Personally, I find the results of treatment in cases of chronic gastric catarrh, with constipation or irritative diarrhœa, the most brilliant of any I have to deal with. I have seen, frequently, a tongue clean and a lost appetite return in a very few days after beginning treatment. The treatment is very successful in cases of fæcal accumulation in the colon, a condition often existing when constipation is not complained of. The action of the bowel in these cases is retarded, though the patient may pass a motion daily.

6. Various chronic skin diseases in which sulphur and free elimination of waste products are likely to prove useful. In this regard I feel bound to say that in the treatment of skin diseases I have seldom been able to rely solely on the sulphur treatment, but have usually to supplement it by local applications. Local applications which have failed before coming to Harrogate often succeed here, probably by reason of the improved condition of the blood, and the softening effect of the baths upon the skin.

7. It is not generally known that syphilis is treated here exactly as at Aix-la-Chapelle, so that all disorders caused or modified by that disease may be as suitably ordered here as there, with the advantage to the patient that his disease is not diagnosticated by his friends on hearing the name of the watering-place to which his medical adviser has consigned him.

8. I think Harrogate is a good place to send patients to who are suffering from failing heart, particularly if gout be the original cause of it. As I have pointed out, the treatment in vogue at Nauheim can be had here, at least a good imitation of it, and many patients could come here who

would not be able to travel to Nauheim. Harrogate contains within its boundaries a common of 200 acres, called the Stray, interlaced with level footpaths on which patients with feeble hearts can obtain gentle exercise in the open air.

It may be well to add a few words with regard to the time of the year most suitable for treatment, and the arrangements for the accommodation of visitors. With regard to the first point the baths and waters are available all the year round, so that patients coming at any time can be treated. But Harrogate, though bright and dry in winter, is undoubtedly a cold place, and is therefore distinctly a summer spa. It is often too cold in Harrogate, but very rarely too hot, as there is always more or less breeze to temper the sun-rays. The most crowded months are July, August and September, and they are certainly the best for those patients who wish to unite a little amusement with their cure, or who wish to bring their families with them to enjoy themselves, but for the class who come for treatment alone, there are many advantages gained by coming in April, May, June or October. The hotels are less crowded, and in many little ways a patient gets more attention. Besides, if money has to be considered, rooms are much cheaper.

The medical practitioner sending a patient to Harrogate would do well to remember that the town is a very straggling one, and is divided into three districts—high, low, and central. If his patient comes for the air alone, or coming for baths and waters, is able to walk a considerable distance three times a day, high or central Harrogate would be most suitable. On the other hand, the wells and baths are in low Harrogate, so that patients unable to walk well should be sent there.

With respect to the arrangements for the accommodation of visitors there are, in Harrogate, numerous hotels, boarding-houses, hydros, and private rooms in abundance. It is not unimportant to give advice to your patient as to which of these classes of establishments they should go. I have seen quiet and retiring people located at a boisterous hydro, and hating it; and I have known a dashing officer bored to extinction in a quiet boarding-house, called a private hotel. He retreated in twenty-four hours, with loss of a week's board for which he had arranged. On the other hand it is a great rest to a

lady to be quite freed from house-keeping cares, so to let her go into lodgings, and have all the shopping to do, is not wise.

These points may be considered too trifling by some, but experience teaches one that it is desirable to enter into details of this sort; perfect contentment, with the surroundings, aids a cure. A well-known Irish member is reported to have said that in any future treaty between England and Ireland, a clause, annexing Harrogate to the latter country, will have to be included. He evidently considered that Ireland required Harrogate as a holiday ground and health resort for its people, and I agree with him.

In conclusion, let me repeat what I have said before as to the selection of cases. If a patient, no matter what his special ailment may be, has a chronic disease which is not organic, but yet fails to get well under ordinary treatment, it is worth considering whether a three weeks' course of such treatment as I have endeavoured to describe, would do good. If the ailment or condition can be shown to be caused by faulty chemistry of digestion, or by want of free elimination of waste products, surely a treatment in which bowels, kidneys, and skin are kept in activity, without any special strain on the constitution, is worth trying, particularly if the patient is one likely to be benefited by change and rest.

ART. XXX.—*Defective Metabolism in its Relation to Gout.*[a]

By M. A. BOYD, M.D.; Fellow of the Royal College of Physicians, Ireland; Physician to, and Lecturer on Clinical Medicine in the Mater Misericordiæ Hospital, Dublin.

THAT the normal metabolism of the human body, both as regards tissue change and the elaboration of the alimentary substances introduced from without to maintain them, should produce no disturbing effects on the organism of a healthy individual, we regard as the first principles of physiology.

By a perfect metabolism we mean a perfect functioning of all the various physiological processes that take place in

[a] Read before the Medical Section of the Royal Academy of Medicine in Ireland, Friday, March 20th, 1896.

the body. For convenience of classification we group these processes under anatomical heads called systems, all interdependent on each other in maintaining the health of the individual, and derangement in any one of which is followed by imperfect functioning of the others, producing evidences of defective tissue change, both destructive and constructive—all of which the term metabolism comprehensively includes.

In this paper I am only concerned with those systems that seem to me to be mainly responsible for the production of a vicious change in this metabolism, leading to what we understand as uricacidæmia, or gout. According to the most recent views gout is uric acid in excess, which, driven from the blood in a sub-alkaline condition of that menstruum—being no longer held by it in solution—precipitates itself in back waters, so to speak, of that fluid where the stream is slowest and weakest, carrying with it in its flight some of the soda salts of the blood; and, after precipitation, robbing the tissues around it in its new resting-place of all alkaline salts contained in them, to return again to the blood when a rising alkalinity of that fluid tempts it back, or to remain in its resting-place if a sub-alkaline condition of the blood continues. Both in the blood and out of it in the tissues, it is, when beyond a certain proportion, a foreign body, and manifests itself in both situations by well-marked symptoms. All recent writers on the subject are nearly agreed as to this being the condition of affairs in gout; but what they are not agreed on is, as to why uric acid in excess should be present in the blood?—and it is on this aspect of the question I venture to offer some remarks.

Whence comes this excess of uric acid? According to those who regard it from a merely chemical point of view, the excess is due to the food ingested being too highly nitrogenous, and the blood—being low in alkalinity from acids introduced with them—is an insufficient solvent for uric acid formed out of the compounds of urea at or in the renal barrier, and the kidneys failing to eliminate, it is carried back again into the circulation by the renal veins. Whilst others explain it by the individual possessing a hereditary tendency to form uric acid in excess, and the kidneys failing in elimination, it gradually accumulates in the blood. These

are the chemical views of the ætiology of gout, with the corollary deduced from them as to its rational treatment from a purely chemical point of view of giving alkalies, or alkaline salts, that render the blood more alkaline, and are good solvents of uric acid, and behold the uric acid is eliminated by the kidneys, and appears in increased quantity in the urine. This simple view of the matter has opened the gates to all kinds of quackery and quack remedies, all claiming to be solvents of uric acid; and the professional, as well as the public, mind is captivated by the brilliant results that have been said to follow the exhibition of such remedies. But after a little the gouty symptoms return again, and then the thoughtful mind turns to consider what other causes than mere chemical ones will explain this vicious recurrence. Nearly every writer on the subject—since Garrod discovered uric acid in the blood of the gouty—has put forward theories to account for its presence, and its over-production. Imperfect oxidation of urates, put forward by Murchison, and advocated by Garrod and later writers, certainly seemed to take hold of the professional mind, and has to-day many strong advocates. It has certainly, in theory at all events, chemistry to recommend it. Lately Harbaczewski, from chemical investigations, has brought forward the view that uric acid is the metabolic product of nuclein derived from leucocytes. Its increase in the blood and urine in leucocythæmia, and in pernicious as well as in other forms of anæmia, lends strong support to his views. All cases of gout are, however, not associated with symptoms of either leukæmia or pernicious anæmia, though a transient anæmia is very frequently associated with the first symptoms of an excess of uric acid in the blood, and one form of gout—that known as atonic gout, occurring in the flabby and lymphatic—is characterised by anæmia as a marked symptom; but to this I will allude later. Harbaczewski's theory as to the source from which this excess of uric acid is derived applies to only one of the great physiological systems—the circulatory one; but, in my opinion, defective metabolism in others exercises from time to time a preponderating influence in this excess, and it is with a view of calling attention to this that my remarks principally apply. As far as my views have led me along this line of

observation and investigation, it has, I think, a very important bearing on the question of treatment of uricacidæmia and gout, for we cannot—looking at the matter from the mere chemical standpoint alone—hope to rid our patient of this vicious tendency by merely dissolving out uric acid from his system if we leave the causes that are constantly adding to it untouched. What these causes arise from will require a review of all the various physiological processes of the body, included in the system groups I have mentioned, and defective metabolism in which adds to the blood the various compounds of urea in such quantities that the excretory organs, especially the kidneys, cannot deal with it, and in their efforts to do so form from the light soluble urea compounds the heavier and more concentrated uric acid. This defect, as we all know, increases with age as the tissue metabolism becomes less and less active, and its first onset is coincident with this lessening of metabolic activity. The views put forward by Murchison as to lithæmia being the forerunner of gout seem to me to afford strong evidence in this direction. Lithæmia is but the first evidence of lessened metabolic activity, and as age increases, this lessened activity increases with it, until such a condition is reached that one of the most simple metabolic processes in the body—the conversion of proteids and waste products into urea—becomes a most complicated one, leading to a gradual auto-intoxication, having lithæmia at one end in its primary stage, and uric acid at the other in its final one. That this metabolic defect is not confined to one function or one system alone I am firmly convinced, and though the digestive system is singled out by writers of to-day as the chief sinner—and in the majority of cases with very good reason—it is not the only one. I shall take up the various systems in the order of their importance, and begin with

THE NERVOUS SYSTEM

first, as it dominates and overshadows every physiological and pathological process of the body. Its influence in the production of gout is invoked by every writer on the subject since the time of Sydenham, and in his Treatise on Gout, Sir Dyce Duckworth lays stress on the undoubted influence

exercised by the nervous system in its production. Many other writers do the same, including Dr. Ralfe. Sir Dyce Duckworth regards gout as a neurosis, which descends as a hereditary legacy from progenitors. Given the same conditions in two individuals to form uric acid in excess, the individual with strongly-inherited neurotic tendency will develop gout, and the other will not. We know in other neurotic affections that the neurotic tendency is a transmitted or inherited one, and it to some extent explains how the liability to gout in families becomes hereditary, from an innate defect in nervous metabolism transmitted from one generation to another. That this neurotic element is strongly marked in gouty families we cannot deny, and that gout alternates with other neuroses in such subjects is equally well known. The descendants of a gouty stock, though they may not themselves show evidences of uricacidæmia, are the victims of other neuroses—such as epilepsy, hysteria, hypochondriasis, megrim, insanity, insomnia, and neuritis, with many other nervous affections.

Nor is this instability of the nervous system confined to those who inherit the gouty tendency, for in those who acquire it by indulgence we have evidence of this instability. Such individuals possess a nervous system that is (to use a popular expression), "easily upset;" they are of an anxious and sensitive disposition, choleraic and irritable, easily cast down and easily excited by trifles, with evidences that point to vaso-motor equilibrium being easily deranged, and a tendency to flush and sweat from slight causes. Amongst women such instability is evidenced by hysteria, dissatisfaction, and emotion, morbid nervous energy, with palpitation and ovarian irritability, and, at the menopause, a tendency to involuntary flushing and tachycardia, with or without symptoms of Graves's disease. In fact the gouty individual possesses a vulnerable nervous system, which is not confined to one portion of that system alone, as the higher centres, as well as the vaso-motor and trophic ones, share in it.

How will these evidences of altered metabolism on the part of the nervous system produce an increase in the blood of morbid material, out of which uric acid is formed? By the increased disintegration of nervous elements, which must

accompany all perverted over-action in any part of that system, we cannot originate a single mental conception, nor produce a volitional impulse, the result of that conception, without causing a change in the metabolism of the cortical cells of the brain, and this extends to all parts of the nervous tracts that take part in it. We are all familiar with the causes that directly produce or originate gouty attacks from mental conditions in the predisposed, such as over-work of brain, anxiety, exhaustion of brain and nervous system, loss of sleep, and shock from any cause. Even in many diseases of the brain, accompanied by increased disintegration of brain cells, uric acid and gout are frequent accompaniments; and our lunatic asylums furnish abundant examples of such conditions. The blood is flooded by the products of such nervous metabolism, or ratherdefective metabolism; and when the nervous regulating mechanism, that presides over their conversion into simpler compounds to assist in their elimination, is in an unstable condition, they accumulate in it.

Nor is evidence wanting on the physiological and chemical side to show this, as the following substances have been found in nerve-tissue associated with defective metabolism—xanthin, hypoxanthin, and kreatin, substances closely allied to or easily convertable into uric acid.

THE DIGESTIVE SYSTEM.

The system which comes next in importance, from my point of view, as a factor in this imperfect metabolism is the digestive system. Indeed, it may be broadly stated that in the acquired form of gout it plays the *rôle* of chief factor, and, according to Dr. Haig, the only one in the production of uricacidæmia. We have to thank this observer for the side-lights he has thrown on the pathology of uric acid, and the patient labour he has bestowed in experiments on himself to show the dietetic causes which produce an excess of it in the blood, and for the ingenious theories he has brought forward to explain its behaviour and its various effects, both in the blood and out of it, many of which, supported by experiments, appear to be reliable. He has established and confirmed the important fact that uric acid exists in the blood in a definite ratio to urea, which in health is

about 1 to 35, and that any increase of it above this proportion constitutes a condition of uricacidæmia; its future behaviour as to elimination, or increase, being altogether regulated by the alkaline or sub-alkaline reaction of the blood, and by additions from the dietetic side. He has added to and confirmed the valuable investigations into the chemistry of uric acid made by Sir A. Garrod, Sir Wm. Roberts, and Professor Latham.

Whilst I fully agree with him that the chief causes for the excess of uric acid come from the digestive side (due to faulty metabolism in the splitting up of nitrogenous compounds), I cannot agree with him in the views he holds, that the derangements in the various parts of the body (the digestive tract included) are but the results of the presence of uric acid present or precipitated in them, and not the cause of its production.

From my point of view, embarrassment of function in any part of the digestive tract, arising from dietetic excesses in the first instance, or to gradual lessening of functional activity as age advances, or to changes in the normal secretion of the glands that take part in it, the result of disease or derangement, is the cause of this defective metabolism, which leads ultimately to the plus production of uric acid. Let me take up the first cause I have alluded to—dietetic excess—in its bearings on the subject. We all know from observation how long dietetic excesses may be indulged in by the young, and also by the healthy adult, whilst the fierce fires of a healthy metabolism are unchecked by derangement or disease. As long as the digestive organs are healthy the only result that follows the excess is an increased quantity of lithates, or urates, deposited in the urine from a temporary embarrassment, but the perfect metabolism soon returns to its normal condition, and no ill results follow, and this condition may go on for years; but let a catarrh of the stomach arise from any cause leading to fermentation in the gastric contents, and the formation of fatty acids, and then the first evidences of a defective metabolism in nitrogenous compounds commence, increased gastric acidity with lowering of blood alkalinity from their absorption follows, and uric acid begins to manifest its presence. With the disappearance of the gastric catarrh a healthy metabolism again asserts

itself, urea is excreted in normal quantity, and uric acid falls, not to return again until a fresh gastric catarrh supervenes. If the individual is now nearing the period when the general metabolism is beginning to fail, and its fires to burn lower (which in many individuals takes place towards the end of the "thirties," but may be delayed to the "fifties" or even "sixties"), he realises, as the popular phrase puts it, that "he has a stomach or a liver," which may be translated into—his metabolism is failing, and uric acid is being constantly added to his blood. If from alcoholic or dietetic excesses, his stomach catarrh now becomes permanent, or his liver functions deranged from the same cause, the picture is complete. There is no longer a healthy rebound in his metabolism, his waste products accumulate, and uricacidæmia is established, and a trivial accident, or lowered nervous influence — the result of some illness — may determine precipitation in his joints.

Though this defective metabolism may have its origin in different portions of the digestive system, I am satisfied the stomach is by far the most frequent situation of its inception. The various derangements of this organ, associated with fermentative changes, and lessened or altered secretion with dilatation, and the formation of fatty acids, and of toxins, the result of microbic growth, must all contribute in lowering its metabolic activity. It is well known to the observant physician how frequently dyspepsias arising from these causes precede for years the advent of the gouty manifestation; and he can generally foretell its ultimate appearance from their persistence. Persistent acidity is a well-known symptom in those who ultimately become gouty.

That the liver plays a most important part in the metabolism of nitrogenous compounds there can be no doubt, and that its derangement is followed by a lessening of this metabolism we must all admit.

It is not necessary I should allude to the physiological evidences in support of these facts, as the literature of the subject has established them; but I may again allude to the observations of Murchison in his Croonian Lectures on "Functional Derangements of the Liver," where he points out that lithiasis is the result of a faulty metabolism of that

organ, due to functional derangement; that this symptom occurring in children generally indicated a transmitted tendency to imperfect function on the part of the liver; and that the subjects of it were generally the children of gouty parents. I may also allude to the chemical investigations of Prof. Latham, in connection with defective metabolism on the part of the liver, where he states:—"Just as in diabetes the essential fault lies in the inability of the system, either in the liver, or it may be elsewhere, to effect the metabolism of glucose, which then passes into the circulation, and is discharged by the kidneys, so in gout or gravel, the imperfect metabolism of glycocin, a derivative of glycocholic acid, is the primary and essential defect. Unchanged, it passes from the alimentary canal, or elsewhere, into the liver; there, under the action of the gland, it is conjugated with urea, resulting from the metabolism of the other amido bodies, leucin-tyrosin, &c., and is converted into hydantoin, or a kindred body, then passes on to the kidneys, to be combined there with another molecule of urea—forming ammonium urate—a portion of which overflows into the circulation, and is converted into sodium urate." Besides functional derangements of the liver inducing a defect in its metabolism, it is a matter of observation how frequently catarrhal congestion of that organ precedes the actual manifestation of gout, and an arrest of the secretion of bile, with clay-coloured stools, often precedes an attack. Ebstein has recorded cases of hypertrophic cirrhosis in gouty men even without portal-venous obstruction; and Murchison noted the frequency of cirrhosis in connection with gout, and remarked that "the condition of liver which develops gout renders it liable to suffer from alcohol, even in small quantity;" and Sir Dyce Duckworth observes—"The liver is the organ in which in health uric acid is chiefly formed, and it is probably to derangement of function in this gland that we must look for over-production of this substance."

Another portion of the digestive system which contributes a very considerable element in this defective metabolism is the intestine; here, as in the stomach and liver, we have constant evidences of it—associated with or preceding gout. Constipation from inanition or atonic muscular action is con-

stantly found, alternating with fermentation of its contents and diarrhœa, and a proneness to catarrh from slight causes.

The researches of Bouchard in his work, "Auto-intoxication," have abundantly proved the many toxins which may be absorbed from the intestine. Most of these toxins, the result of microbes, many of which are normal inhabitants of the intestine, but, owing to lessened metabolic activity on the part of the excretory glands (especially the liver), obtain a temporary mastery, and paralyse the intestinal functions. He has also pointed out that the absorbents, from undue delay associated with constipation, abstract many poisonous compounds from the fæces which are hurtful to the economy in their passage through the blood before being excreted by the kidney. His experiments with intestinal antiseptics, and their effects in diminishing the poisonous alkaloids subsequently extracted from the urine, prove this. Kreatin, leucin, and tyrocin, all easily convertible into uric acid, are derived from the intestine during defective metabolism, as Latham has pointed out.

THE CIRCULATORY SYSTEM.

The system which ranks next in importance, after the digestive one, in the production of this imperfect metabolism, is the circulatory system; and, if Harbaczewski's conclusions are correct, it should prove the most important one in the plus production of uric acid in the economy. According to this observer, uric acid is the metabolic product of nuclein derived from leucocytes, and he contends that gout is a leucolysis—a perverted metabolism in blood-formation—and he reasons from the plus production of this acid present in the blood and urine in both leukæmia and pernicious anæmia, a well-known clinical feature in both these diseases. If so, this perverted metabolism is closely connected with both blood-destruction and blood-formation, and the presence of this acid in excess in the spleen and liver in uricacidæmia is to some extent accounted for.

If an increased formation and destruction of leucocytes in this affection takes place, it should certainly diminish their contributory aid to general blood-formation, and lead to a poverty in red corpuscles as well, and so explain the anæmia

that marks many of the atonic forms of gout. But there are other portions of the circulatory system which afford evidences of this metabolic defect besides the blood. We find clinical evidences of it through the entire circulatory channels from the heart to the capillaries. Coincident with the first evidences of failure in the general metabolism in adults nearing middle age, comes an atonic condition of the heart muscle itself—its contractions have lost their strong muscular element on auscultation and the heart becomes more excitable and more easily disturbed, more rapid after exertion, and prone to intermit, and there is a greater tendency to dyspnœa after violent exercise on the part of the individual than formerly. Pathologically there may be found no change in the cardiac muscle, but clinically we recognise that there is some defect evident, either a neuropathic or a nutritive one, affecting its muscular tone. The arteries, and especially the veins and capillaries, seem to share this, and their regulating vaso-motor mechanism seems also more easily disturbed, and their trophic functions to suffer, rendering the coats of the vessels more prone to changes—whilst the arteries from their greater resistance show at first least evidences of this, the veins and capillaries show early signs of it. Defective metabolism in the capillary circulation may, to some extent, explain the trophic changes in the skin that are so frequent in the gouty, and also the failure in elimination of uric acid by the capillaries of the kidneys, to which Garrod and so many other writers allude. Evidences are visible to the naked eye in the colour of the skin when this failure commences—as the florid man begins to look pale or livid, and the pale man sallow or bilious-looking—whilst a tendency to thrombosis occurs in the capillary veins, rendering them prominent. We know how frequently phlebitis ultimately supervenes in the veins of the extremities, preceded by or accompanying thrombosis in the veins of the rectum, leading to hæmorrhoids; and also in the veins of the pharynx and larynx, leading to congestion of their mucous membranes.

Dr. Haig would explain the vascular changes by the high arterial tension and contracted capillaries resulting from the presence of uric acid in the circulating blood, and the irri-

tating and poisonous effects it exercises on the coats of the vessels and on their vaso-motor nervous supply. I fully agree with him that in pronounced uricacidæmia the sphygmograph indicates this high arterial tension, but this is quite consistent with a lowered metabolism in the circulatory system generally.

THE LYMPHATIC SYSTEM.

Intimately associated with this lessened metabolic activity in the circulatory system comes a lessened metabolism in the lymph channels, which they subtend, and especially in the lymph spaces, with lessened oxidation of the waste products contained in them, derived from the metabolism of the tissues generally. In this system we have a fertile source of production for the early progenitors of uric acid, if the heart and circulation is defective. The lymph corpuscles supply abundance of nuclein, which, according to Harbaczewski, is one of the chief sources of uric acid, and the plasma is found to be rich in leucin and xanthin. Lauder Brunton has pointed out how essential a free movement of the lymph in the lymph channels is to oxidation and metabolism, and what an influence massage and muscular movement exercises over it from the pumping action produced in the lymph-spaces by both forms of exercise. Muscular movements and respiration are almost the only means by which the circulation is carried on in this system, as it has no motor mechanism if we except the vis-à-tergo of the heart and arteries, and if these latter are in default, delay and defective metabolism must result if muscular exercise is not taken. From the physiological side, this is an argument in proof of the fact that a sedentary life and deficient exercise conduce to uric-acidæmia and gout.

THE RESPIRATORY SYSTEM.

I will now allude to the part played by the respiratory system in this defective metabolism. The chief function of the respiratory system is to supply oxygen to the blood, which in its turn supplies it to the tissues, so aiding in metabolism, and in the combustion of waste products contributing to animal heat; at the same time getting rid of CO_2 (a

waste product) and of water. If from any cause a defect arises in this system, the process of oxidation is interfered with, CO_2 is retained, and waste products accumulate in the blood and tissues generally. Have we any evidence that defects arise in the respiratory system, and that their effects lead to uricacidæmia and gout? I will take up the evidences afforded, both from the physiological as well as from the clinical side. We know those who live an indoor life, or dwell in bad air, are more prone to form uric acid than those who live out of doors or in pure air. The former get less O into their blood and in addition inhale more CO_2 (a great portion of which is retained), whilst with the latter oxidation is more perfect, and there is no uricacidæmia, though they may have the same causes, either dietetically or by hereditary tendency, for its production. Or, again, we find there is in some individuals a tendency to greater sensitiveness of the respiratory tract than in others—they catch colds easily, are more sensitive to changes of temperature, prone to laryngeal and bronchial catarrh, or to asthma and emphysema, and these are just the individuals who ultimately become gouty. So frequently is this associated tendency noticed that many pathologists have ascribed gout to the toxins formed by a catarrhal bacillus (not yet discovered) that is supposed to produce laryngeal, pharyngeal, and bronchial catarrh. I think we can explain this liability to catarrhs to an innate defect in respiratory metabolism on the part of the individual, and which is only another evidence of this general metabolic defect, here as elsewhere, though the tendency with many writers is to ascribe the catarrh to the uric acid, and to the precipitation of this peccant material in the affected parts. I am far from denying that we do not occasionally see an attack of bronchitis in the gouty, which is directly due to gouty deposit in the mucous membrane of the bronchi; as uratic deposit has been found there pathologically by competent observers, its presence here would seem to be only accidental, or only part of a general tophaceous deposition, as we know the bronchi are not a channel by which uric acid is eliminated, though it is so for other toxins that directly produce bronchitis-uræmia for instance—and, according to Bouchard, the fatty acids which indicate their presence

when being eliminated by this channel, through the peculiar odour of the expired air.

THE MUSCULAR SYSTEM.

The last system I shall refer to in connection with this subject is the muscular system; and here also evidences are not wanting to show the amount of waste products they contributed to the blood both during their healthy metabolism, but more especially when this is defective. Here we have one of the largest factors in the plus production of the urea-forming compounds, which during active exercise is constantly poured into their lymph spaces, and from there into the blood. A glance at the many products of muscle waste will show this—kreatin and kreatinin, xanthin, and hypoxanthin and uric acid. During exertion the muscle becomes acid, and many acids are developed in it—paralactic, lactic, and phosphoric acids—and, after violent muscular exercise, many of these are retained in the blood, and contribute to rise its acidity, and lessen its solvent action on uric acid. This latter acid was found to be increased in the blood by Handfield Jones, in the person of an Alpine climber, on whom he made experiments after a severe day's mountaineering; but it was found to be afterwards eliminated during the subsequent rest, but not for some time. During muscular exertion very active oxidation of the waste products takes place, O being taken in and CO_2 being given off. But, with violent exercise, the O does not seem to be added in proportion to CO_2, and the latter accumulates in the muscles, giving rise to a sense of fatigue, and lessening their metabolism,—a fact which should not be lost sight of in ordering exercise for the gouty. Moderate exercise increases metabolism, but violent exercise diminishes it.

I would not wish to finish this subject without a word as to the reasons which seem to me to favour precipitation of uric acid in the joints so producing the symptoms of gout, as an explanation of this epiphenomenon should necessarily follow the foregoing remarks. This selection of the joints by uric acid, under certain conditions of the blood, seems to be due to lessened nutritive changes in them, and is not a mere coincidence; here, also, it seems to me, a lessened

nutritive metabolism, or an atrophic condition, renders them vulnerable; in this process the conditions of their trophic nervous supply must play an important part. If the nervous system is to be especially invoked in gout, it is in the production of this vulnerability in these situations. The facts that have been accumulating since Charcot first called attention to the disease which bears his name, and to the intimate relation he proved to exist between the joint lesions and the spinal cord, through the influence of its trophic nerves, go to show that there is a defect in their nutritive metabolism in such lesions.

Nor are evidences wanting from the clinical side to show that in this precipitation of uric acid in the joints, the nervous system is upset, and its influence in preserving them impaired. We know an individual may go on forming or retaining uric acid in the blood for years, and no gout results until some depressing influence upsets his nervous equilibrium, and then gout becomes manifest. It may be owing to a nervous shock, or to over-anxiety, or loss in business or reputation, or to an illness, or to an accident, but that it manifests itself under such circumstances we have abundant examples to prove. We all know how an accident to a joint will produce gouty pains in it afterwards, by interfering with the nutritive metabolism of its delicate structure, and it is often the first indication to us and to the patient that he is gouty—a fact which neither the patient nor the physician previously suspected.

In conclusion, the inferences we must draw from this review of the subject is, that the gouty individual is a susceptible individual, whose general metabolism is easily upset, and that this vulnerability may arise from a disturbing influence in any of the great physiological systems I have enumerated—in the nervous, the digestive, and the circulatory systems especially—and to a lesser extent in the others I have mentioned, and no treatment can be successful which does not take note of this. We should earnestly inquire into and, by investigation, ascertain in which of these physiological systems the defect first arises—a matter of no small difficulty in many cases—as, owing to their interdependence on one another, defective metabolism in one may influence that in

all the others (as I alluded to in the first part of my paper), and it may be almost impossible in the general confusion to single out the ringleader in this "vice of nutrition," and in doing so we should bear Ebstein's remark in mind, that the "gouty individual forms uric acid in perverse localities, even in bones." One fact we should bear in mind, that clearing the blood and system of uric acid by alkalies, or salicylates, leaves the principal part of our work undone—namely, the correcting of the faulty metabolism in whatever system it first arises by suitable remedies directed to them. What these remedies should be does not enter into the scope of this paper, but we know we can influence their metabolism for good by many means—medicinal, hygienic, and dietetic. We must also remember we are dealing with a complex problem, which is mainly a biological one, and that chemistry alone will not solve it for us, though it has done a great deal towards it. Whatever additional knowledge we are likely to gain—and much is still needed—must come from workers in the field of biological investigation, and it seems to me it is in this direction that investigators should turn their attention for its complete solution.

SEWAGE FARMS.

Mr. J. Neild Cook, Health Officer, Madras, read a paper before the Indian Medical Congress, to which we desire to draw the attention of sanitarians. It gives the results of twenty-five years' experience of sewage-irrigation in the immediate neighbourhood of the city of Madras. These results are favourable from every point of view. Mr. Cook's paper is printed in the December issue of the *Indian Medico-Chirurgical Review ;* and has also been published in a Madras G. O., of 10th May, 1895.

INFANT MORTALITY IN PARIS.

More than 155,000 children under one year die annually in Paris, the greater number of them owing to neglect on the part of their mothers. The proportion of illegitimate births, which at the beginning of the century was four or five per cent. of all births, is now nearly nine per cent. for France and twenty-eight per cent. for Paris. Among the children of Paris wet-nursed the average mortality is seventy-seven per cent.—*Med. Rec.*

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Hand-book of Leprosy. By S. P. Impey, M.D. London: J. & A. Churchill. 1896. Pp. 112.

This work gives the results of the observations of the author, made while he was chief and medical superintendent of the Robben Island Leper Asylum.

It begins with a historical introduction, in which the origin of the disease in each of the South African territories is traced so far as this is possible. Although tradition states that leprosy was prevalent among the Hottentots before the advent of the white man, authentic history begins only in the middle of the last century.

The next chapter gives an elaborate account of the distribution of the disease in the different districts, and is accompanied by a coloured map.

In South Africa leprosy is more common in men than in women. It may occur at any age, cases having been in the Robben Island Asylum who contracted the disease at three years of age, and at eighty years. The average age of 1,088 patients at the time of admission is thirty-three and a half years.

Four forms of leprosy are recognised—the tubercular, the anæsthetic, the mixed, and, a newly-described form, the syphilitic.

While in cold countries, as Norway, the proportion of tubercular cases is greatest, in Africa, as in all warm and temperate climates, the anæsthetic form preponderates. Of the 703 patients admitted to Robben Island since 1890, 52·48 per cent. were anæsthetic, 33·86 tubercular, 11·53 mixed, and 2·13 syphilitic.

In his views as to causation, Dr. Impey is a pronounced adherent of the bacillary origin of leprosy. He inclines to the view "that either there are two very similar, but not

identical bacilli, one of which has a predilection for the skin, and the other for the nerves; or, that in pure anæsthetic leprosy the poison secreted by the bacilli acts in a more powerful manner upon the nerves, because the system of the patient is peculiarly susceptible to the effects of the ptomaïn." The author has failed to find the bacilli in the nerves in cases of anæsthetic leprosy, and concludes therefore that these parts are affected by a ptomaïn, or poison formed elsewhere in the body by the bacilli. This is contrary to the experience of other observers, and to our own, although there can be no doubt that the number of bacilli in the cutaneous tubercles is far larger than those in the nerves.

As the bacillus appears incapable of living outside the body as a saprophyte, if we admit it as the cause of the disease, this must be due in every case to infection from a diseased person, or to heredity. The influence of heredity is doubted, and the author's statistics are strongly against this mode of origin of the disease.

In order that infection may take place the recipient must be susceptible. In the author's opinion the susceptibility is usually induced by cold, which he looks on as the exciting cause of leprosy.

After the infection has taken place, a period of latency, which does not usually exceed two years, but may be as short as three months, occurs before the symptoms appear. During this time the bacillus "probably circulates slowly through the lymphatic system, safely protected from harm in a leucocyte." The period of incubation is terminated by accidental causes.

The description of the pathology and morbid anatomy does not contain very much that is at once new and well founded. Indeed a good deal of the author's peculiar views are little better than ingenious and interesting speculations. As to the so-called lepra cells, or those cell-like bodies in which the bacilli are so frequently enclosed, and which have been so often the subject of discussion, it is stated that they consist of "the masses of bacilli, bound together by the homogeneous gummy matter which they secrete while multiplying."

The author's views on syphilitic leprosy are new, and, if

confirmed, will be of much value. He says:—"In this form of the disease there is a terrible complication. A patient with all the pathological signs of syphilis, with its extensive ulceration of the skin, mucous membranes, and bones, and with its infiltrations of the various structures of the body with syphilitic material, is affected with leprosy in some form. We may have tubercular syphilitic, anæsthetic syphilitic, or mixed syphilitic leprosy, according to the form contracted."

"In a mixed form the symptoms are naturally the most severe, and a patient suffering from this form of syphilitic leprosy is in a condition which is almost beyond description."

This form of disease is considered worthy of a separate designation, "for though it is produced by a combination of two distinct diseases, yet each malady modifies the other in such a marked manner that the distinctive characters of the primary diseases are lost in the combined disease."

"I believe that it is by having failed to recognise this form of leprosy that the descriptions of the disease given by most writers are so conflicting, varied, and often misleading."

A careful and interesting account is next given of the symptoms presented by each of the four forms of leprosy recognised by the author.

In the chapter on the cause of death, we read that out of 107 fatal cases which occurred since 1892, 17 died of erysipelas, 12 of marasmus, due to exhaustion from excessive discharges, and 12 from tubercular phthisis, 10 from diarrhœa, 10 from laryngeal affections, 9 from bronchitis, 7 from nephritis, and the others from different complications.

Some very interesting and important figures are given showing the duration of the disease. In the 44 cases of tubercular form the average duration of the disease was 5·5 years. Of 41 cases of the anæsthetic form, 11 years and 5 months. In 23 cases of mixed leprosy, 9 years and 3 months. In the syphilitic variety the disease tends to assume a chronic form. The tubercular cases die frequently of erysipelas; the anæsthetic cases of diarrhœa, phthisis, and pyæmia, while the mixed forms are carried off by both classes of affections.

The treatment is chiefly hygienic. A mask of zinc ointment on lint placed over the tubercles does good, by protecting the part from cold or light. Iodide of potassium, mercuric

chloride, chlorate of potass. in sarsaparilla, or salicylic acid, is sometimes useful. Chaulmoogra oil is ineffective.

With a view to prevention, all tubercular patients should be very strictly segregated during the ulcerative stages of the disease, but before and after that period their isolation is not necessary. It is unnecessary to segregate anæsthetic patients. But a record should be kept of every leper patient, and they should be subject to periodical inspection.

Marked improvement has been seen in cases which have undergone an attack of erysipelas. Although the author has not ventured to put his opinion to the experimental test, he believes "that one attack of facial erysipelas would destroy all the bacilli in the tubercles on that part of a person who has not had the disease for more than three years; a second attack would destroy the bacilli in the extremities, if there are any located there; and thus, I think, by artificially producing two attacks of erysipelas in a recent case of tubercular leprosy the disease could be cured."

The three last chapters deal with the regulations at present in force for the segregation of lepers, and contain suggested modifications of the laws.

The text is illustrated by thirty-seven full-page plates, showing the appearance of the patients in the different forms of leprosy, and, with few exceptions, the figures are excellent. Indeed it seems to us that the chief value of this work—although, as our readers will see, the text is by no means wanting in instructive and suggestive matter—lies in the drawings which form an extensive atlas of this formidable disease happily so little known in this country.

Memoirs from the Biological Laboratory of the Johns Hopkins University. III. Physiological Papers. By H. Newell Martin. Baltimore: The Johns Hopkins Press. 1895. 4to. Pp. 264.

Dr. Martin, whose researches in various branches of experimental physiology are classical, held the chair of biology in the Johns Hopkins University for seventeen years. In 1893 ill-health forced him to resign his appointment:—"In recognition of the value of his work, and as a token of their

affection and esteem for him, his friends and pupils have undertaken the publication of this collection of his papers," which contains some of his public addresses and all of his contributions to experimental physiology made during his connection with the University. Those papers only which appeared under his own name are included; the works inspired by him, but published under the names of his pupils, are not here published. The volume contains twenty-one papers, some of which have been written in conjunction with his pupils, and is a record of work of which the author and his University may well feel proud.

Among the most remarkable of Dr. Martin's investigations are those which he made on the isolated mammalian heart. Observations on the completely isolated hearts of frogs, tortoises, and cold-blood animals have frequently been made, but Dr. Martin was the first to devise a method by which the dog's and cat's heart could be completely isolated from all the rest of the body except the lungs, and kept supplied by an artificial circulation of blood, which could be regulated at will, and which traversed only the coronary vessels and the lungs. In this way the heart could be kept beating regularly and strongly for hours, and many important observations could be made without complications arising from the nerves or other structures with which the heart is normally in connection.

In the first paper this method is fully described. In the second paper it is shown that within such limits as can occur during ordinary life, variations of arterial or of venous pressure have no influence on the pulse-rate of the isolated heart, while the rate rises and falls regularly with the temperature of the blood supplied to the coronary vessels. The dog's heart will beat regularly but slowly at 26° C.; and regularly, but rapidly and feebly, at 41° C.

These facts are further developed and confirmed in the two succeeding papers, the second of which is the Croonian Lecture for 1883. It is an interesting point that, although calf's blood did not maintain the beat of the dog's heart as well as dog's blood, yet that it acted fairly well so long as it was taken from sucking calves, but when these animals began to feed on vegetable food their blood was found to be no

longer suitable, the heart soon showing signs of imperfect nutrition.

In the next paper the action of ethyl alcohol on the heart is studied. The chief effect of this substance, when added to the blood in small quantity, was to cause dilatation of the heart, which did not empty itself in systole, but gradually became more and more distended until it became too large for the pericardial sac, so that this membrane did not allow it to expand further in diastole. When, however, the pericardium was cut away the output of the heart was normal in amount, and the pressure in the commencement of the aorta was normal, although the quantity of blood remaining in the ventricles after systole was so considerable.

In the next paper, on the "suction pump" action of the heart, the conclusion arrived at is that "while the heart in the closed thoracic cavity may, and probably does, act as a suction pump, this is not due directly to an active expanding force of the heart, but is the secondary result of the pneumatic conditions prevailing within the normal closed chest cavity. When the aspiration of the thorax has been removed the right auricle will not receive blood unless supplied to it under a decided, even if small, positive pressure.

In the following paper the temperature limits of vitality of the isolated cat's heart are determined. "First as to cooling—the isolated heart of the cat may be cooled down to a temperature of 16·5° C. (as indicated by a thermometer introduced into the right heart) and yet not be killed, as it revives if soon warmed again, but it usually dies at about 17° or 18° C."

On heating the heart an optimum temperature was found at which the beat was most frequent (not necessarily most effective). This lay between 43·3° and 40·6°. The average of thirteen experiments being 41·3°. The lethal temperature lies between 44·5° and 45°, but sometimes a higher temperature may be reached, and a certain power of accommodation to abnormally high temperatures is often shown by the heart.

In the next paper the synchronism of the pulse in the coronary arteries and in the other systemic vessels is experimentally proved. In the short paper on the vaso-motor

nerves of the heart it is shown that in commencing asphyxia while the arteries of the body in general contract, the arteries of the heart dilate. "The heart arteries dilate that the last remaining oxygen shall go to that fundamental vital organ. It is one of the most beautiful preservative mechanisms that I know of in the whole physiological working of the body."

Following the papers on circulation are several dealing with different problems connected with respiration. Firstly the very complicated respiratory movements of the frog are studied, and the author's ingenuity and technical skill are well shown by the graphic records of these movements. In the second part of this paper is the well-known observation showing the existence of an inspiratory centre in the optic lobes of the frog. This is followed by the research, made with Booker, from which the conclusion is arrived at that as in the frog, so in the rabbit, there is in the mid-brain, below the posterior corpora quadrigemina and close to the iter, a centre, electrical stimulation of which causes accelerated inspirations, finally passing into tetanic fixation of the chest in an inspiratory condition, and correspondingly diminishes or altogether inhibits expiration."

In the following paper we have the experimental proof that in the cat the internal intercostal muscles alternate in their contraction with the diaphragm, and are consequently muscles of expiration.

A research on the effects of light on the elimination of carbon dioxide by frogs whose cerebral hemispheres were removed, showed "that a greater quantity of carbon dioxide is given off in the light than in the dark; that, therefore, the influence of light in producing greater oxidation in normal frogs is simply reflex, and not due to greater bodily activity brought about by psychical conditions dependent on the light; that the cerebral hemispheres do not take any direct part in regulating the oxidations of the frog's body; and that this reflex action of the light, though mainly effected through the eye, is produced partly also through the skin."

Two papers follow on the effects of respiration in the pneumatic cabinet in which the air is compressed or rarefied, the animal sometimes breathing from the outside air through a hole, sometimes breathing the air in the cabinet. The experi-

ments show that this treatment applied to human beings is not without risk, and should be employed only by those who thoroughly understand the conditions of the method and the state of the patient. A very interesting result of rarefaction of the air about the animal while he breathed air at normal pressure, was that by this means a very large percentage of the total blood in the body may be held by the pulmonary vessels and prevented from reaching the heart, thus causing death by what has been called "internal bleeding."

An account is given of a self-feeding chronographic pen, of very simple but ingenious construction. It is similar to that now made by the Cambridge Scientific Instrument Company.

The five last numbers consist of addresses, delivered on different occasions, on the study and teaching of biology, the physiology of secretion, modern physiological laboratories, the study of the physiological action of drugs, and some thoughts about laboratories. They are, one and all, well worthy of careful study, being full of thoughtful and suggestive matter.

The Histopathology of the Diseases of the Skin.[a] By DR. P. G. UNNA. Translated by NORMAN WALKER, M.D.; F.R.C.P. Ed. Edinburgh: William F. Clay. New York: Macmillan & Co. 1896. Royal 8vo. Pp. 1236.

WHEN we learned that a "Histopathology of the Diseases of the Skin" was about to appear from the pen of Unna, we were prepared for a great work, but that we should find this work of such giant proportions, and containing such a mine of wealth in dermatohistopathology—for this we were totally unprepared. Unna's fertile imagination we recognise in many of the chapters in his book; one might instance his explanation of giant-cell formation in lupus vulgaris, and the supposed effect of the tubercle bacilli on protoplasm and nuclei respectively. Many of his theories are startling, and will not meet with ready acceptance, but they are all based upon an intimate clinical

[a] A review of the original German edition appeared in this Journal, May, 1895. Vol. XCIX., p. 401.

and histological knowledge, and admirable reasoning on these clinical and histological facts. For years we have read with immense pleasure and advantage articles from Unna's pen on clinical facts connected with dermatology, and subsequent experience has impressed us with the accuracy of Unna's clinical observations. Moreover, in the field of dermatotherapeutics Unna has done more than any living man to improve methods of treatment, and has introduced into use many remedies which have proved of great practical utility. Still his clinical and dermatotherapeutic work, immense as it has been, has been eclipsed by his histopathological studies. He has produced, single-handed, a volume which, were it the united work of many labourers in the special field of dermatology, might be regarded by them with just pride.

Dr. Norman Walker's translation is admirable. We have recently had occasion to review a foreign treatise on leprosy translated into English by him, and we noted there the ability of the translator in anglicising foreign idioms. Dr. Walker has showed equal skill in his translation of Unna's work, and were it not for the many lengthy and involved sentences, which are so characteristic of the German style of writing, and which betray the nationality of the author, one might almost believe the work an English one. Dr. Walker has exhibited great courage in attempting the translation, and we quite go with Unna in praising the Scottish energy which has enabled him to complete this vast undertaking.

In the English edition, in addition to a double-coloured plate containing nineteen illustrations, which was also present in the original German edition, there are forty-two additional illustrations in the text; these add greatly to the value of the English volume.

Unna's book is a work which stands conspicuously alone in the annals of dermatology as a full and minute record of the histopathology of diseases of the skin as far as is known about them. A vast amount of the histopathology is the result of Unna's individual labours. To this volume constant reference must be made by every dermatologist; in it he will find the most accurate histological and patho-

logical details of the least as well as the most important diseases of the skin, and he will have the charm of learning the always suggestive, if not always to be accepted, views of Unna, whose immense store of knowledge, originality, and mental acumen, are alike truly wonderful. It will be long before a work can appear which will equal, much less excel, that of the Hamburg dermatologist. A debt of gratitude is due to Dr. Norman Walker for bringing it within the easy reach of every English reader interested in the study of diseases of the skin.

Lectures on Pharmacology for Practitioners and Students. By Dr. C. Binz, Ord. Professor and Geheimer Medicinal Path.; Director of the Pharmacological Institute in the University of Bonn. Translated from the Second German Edition, by Arthur C. Latham, M.A., M.B., Oxon.; M.A., Cantab.; Radcliffe Travelling Fellow in the University of Oxford. Volume I. London: The New Sydenham Society. 1895. 8vo. Pp. 389.

The New Sydenham Society has conferred a boon upon the English-speaking medical world on both sides of the Atlantic by arranging for a translation, by a skilled hand, of Professor Binz's Lectures on Pharmacology. They are scientific, and as practical as scientific.

Each lecture was illustrated by experiments upon animals in the theatre—experiments performed as mercifully as possible, judging by this sentence at page 244:—"A few centigrammes of morphine were injected into a vein of this dog, which weighs a little over 2 kilos., in order to render it insensible." In this way, statements as to the physiological and therapeutical effects of drugs are shown to be true, and active intelligent knowledge takes the place of passive, often unintelligent, "cramming." For example, the specific action of commercial digitaline upon the heart was proved at one of the lectures by subcutaneously injecting 0·0005 gramme, which forms a cloudy solution with 0·5 c.c. water, into the back of a strong frog, the heart being exposed. After a few minutes the class could observe an increase in the force of the heart's contractions, the diastole of the

ventricle becoming somewhat lengthened, and the systole more powerful, the further phenomena of irregular heart-action, peristaltic contraction, loss of power of ventricular dilatation, the ventricle finally coming to a standstill in systole, were also demonstrated. This is practical teaching, indeed.

After an interesting "Introduction," Professor Binz proceeds to discuss anæsthetics, morphin and allied drugs. Some more recent hypnotics, such as chloral hydrate, chloral formamide, paraldehyde, amylene hydrate, and sulphonal; the bromides, conin, curare, aconitin and allied drugs; the nitrites; iodine and its preparations; "artificial sleep;" atropin; caffein and digitalis; secale cornutum; calabar bean, pilocarpin, nicotin, strychnin; the ammonium salts; alcohol; the ethereal or essential oils.

The foregoing list does not suggest any classified order. It is a little suggestive of the use of the dice-box in its genesis. Nevertheless, these lectures are entertaining as well as instructive. The style of the work may best be gathered from a quotation. The second chapter, or section, deals with anæsthetics. Professor Binz tells us that "sulphuric ether, or, as it may be more properly termed, ethylic ether, since it contains no sulphur—or simply ether, is prepared from ethylic alcohol (rectified spirit) by heating it with sulphuric acid, and when the temperature of the mixture reaches 104° C. (284° F.), supplying fresh alcohol through a tube in a continuous stream. The fluid which distils over separates into two layers; the upper one is the ether." Then follows a description of the characters of ether. The author proceeds:

"The production of ether from alcohol takes place according to the following formulæ:—

"(1.) $C_2H_5.OH + H_2SO_4 = H_2O + C_2H_5.HSO_4$

"(2.) $C_2H_5.HSO_4 + C_2H_5.OH = H_2SO_4 + (C_2H_5)_2O.$

"That is to say: (1) alcohol and sulphuric acid form water and sulphovinic acid (a viscid, acid fluid forming stable salts; (2) The sulphovinic acid and another molecule of alcohol again form sulphuric acid, the remaining molecules combining to form ether $(C_2H_5)_2O$. Owing to the re-formation of sulphuric acid in the process, a small amount of this substance is sufficient to convert a large quantity of alcohol into ether."

Such is the first volume of this work. The author promises that the general principles which have guided him in treating the subject of Pharmacology will be found in the concluding chapter of the second volume. Until it appears we shall have to possess our souls in patience as to the scheme of arrangement of subjects which Professor Binz has adopted in the preparation of his work.

Royal University of Ireland. The Calendar for the Year 1896. Dublin; Alex. Thom & Co. 1896. 8vo. Pp. 431.

Examination Papers, 1895. A Supplement to the University Calendar for the year 1896. Dublin: Ponsonby and Weldrick. 1896. 8vo. Pp. 707.

THESE "hardy annuals" call for no special remark. The Calendar contains all necessary information for intending and actual undergraduates as well as for graduates, while the examination papers are at once a guide to candidates and a proof of the high standard which the Royal University of Ireland maintains as a great examining board.

The examination papers are beautifully printed by the skilled firm of Messrs. Ponsonby and Weldrick.

We desire to express our acknowledgments to the Secretaries of the University for presenting us with these important academic publications.

The Year Book of Treatment for 1896: *A Critical Review for Practitioners in Medicine and Surgery.* Cassell and Company, Limited, London, Paris, and Melbourne.

IN this, the twelfth issue of this well-known annual, the principal feature is Dr. Patrick Mason's article on Tropical Diseases.

In the different sections there is almost no change. The writers are those who are already well known, and the articles are of the same high standard as those which years ago won the approval of the profession. We confess to a sincere liking for this annual. It is small, handy, and the

sectional editors have so digested and arranged the material of their subjects, that the reader is not confused by a series of contradictory experts. In the twenty-four sections we get a good summary of all the new or revived methods of treatment of the preceding year, and all this at a very moderate price. It is essentially the practitioner's hand-book of reference.

Archives of Clinical Skiagraphy. By SYDNEY ROWLAND, B.A., Camb.; Late Scholar of Downing College, Cambridge; and Shuter Scholar of St. Bartholomew's Hospital. London: The Rebman Publishing Company, Limited. Vol. I., Part, May, 1896. Folio, pp. 16.

THESE Archives of Clinical Skiagraphy consist of a series of beautifully executed illustrations with descriptive text, intended to demonstrate the many applications of the new photography to medicine and surgery.

Our readers may remember that soon after the publication of Professor von Röntgen's discovery at the close of last year, Mr. Sydney Rowland was appointed Special Commissioner to the *British Medical Journal* for the investigation of the clinical applications of the new art. In his preface to the first part of the "Archives of Clinical Skiagraphy," the author shows that in essence the process is nothing more than the photographic representation of the shadow cast by the opaque bony structures, or by metallic foreign bodies, on sensitised plates, when the substances in question are exposed to the so-called X-rays discovered by Professor von Röntgen. As is now well known, the peculiarity of these rays is that they have a standard of transparency entirely their own, so that many of the substances which are ordinarily opaque to light, as we know it, permit the passage of these rays with ease.

The greater part of the practical improvements which have led to the present stage of perfection of the process have been made in the United Kingdom, and in some of these Mr. Rowland has taken a not unworthy part.

The publication is beautifully brought out by the Rebman Publishing Company. Each part of the Archives costs four

shillings net. A neat portfolio is supplied at two shillings net. The present fasciculus includes six plates, which must be seen to be sufficiently appreciated.

Phonographic Outlines of Medical Terms: Being a List of Outlines and Contractions for about 2,500 of the more common Medical Terms. London: Sir I. Pitman & Sons. Issued by the Society of Medical Phonographers.

Those members of the medical profession who desire to become adepts in the very useful accomplishment of stenography, will gladly avail themselves of the opportunity of possessing themselves of this prepared list of the more important and usually employed medical terms in the æsthetically graceful outlines of the Pitman System.

Edinburgh Medical School Calendar and Guide to Students, 1895–6. Containing all the information required for graduation in Medicine, Surgery, and Public Health at Edinburgh University; Fellowship, Licence, Licence in Dental Surgery, and Diploma in Public Health of Royal College of Surgeons; Fellowship, Membership, Licence, and Public Health Qualifications of Royal College of Physicians; Triple Qualification of Scottish Conjoint Board; Classes in the University and School of Medicine of the Royal College of Physicians and Surgeons, Edinburgh, with short Syllabus of each Class; Classes and Schools for Women; Dispensaries, Students' Societies, &c.; also the *Professional Examination Questions* set by the University, Royal College of Surgeons, Royal College of Physicians, and the Triple Board for several years past; the University Preliminary Questions set in October and March, and the Preliminary Questions set by the Educational Institute of Scotland in April and July last. Edinburgh: E. & S. Livingstone. (Sixteenth year of Publication).

From the above comprehensive title it will at once be gathered that every student who possesses the ambition to obtain an Edinburgh Diploma to enable him to proceed with

the practice of the healing art, will hardly hesitate before possessing himself of this very well-prepared guide to the aids and obstacles with which he must necessarily become acquainted in his progress.

Diseases of the Chest, Throat, and Nasal Cavities, including Physical Diagnosis and Diseases of the Lungs, Heart, and Aorta; Laryngology; and Diseases of the Pharynx, Larynx, Nose, Thyroid Gland, and Œsophagus. By E. FLETCHER INGALS, M.D., Professor of Laryngology and Practice of Medicine, Rush Medical College, &c. Third Edition, revised. With 240 Illustrations. London: H. Kimpton & Hirschfeld Bros. 1895. Pp. 686.

THIS work, as may be gathered from its title, is a treatise on the diseases of that portion of the body which is bounded above by the base of the skull, and below by the diaphragm. The first portion of the book treats of the lungs, heart, and aorta. This section comprises 268 pages. The descriptions of the various diseases closely resemble those which are to be found in most works on practice of medicine; they are generally of moderate length, and contain nothing that particularly calls for comment.

The second portion of the work, containing 388 pages, is devoted to the throat and nose. It is written with much more minuteness than the first section, in fact, if printed alone, it would be looked on as a very complete work by itself. It begins with a very complete account of the methods of examination and the appearances of the normal throat. There are many wood-cuts of instruments. The various diseases are described very fully, and with a number of instructive illustrations—thus there are fifteen illustrations of benign, and eight of malignant tumours of the larynx. Most of the instruments employed by the author are illustrated. The book gives therefore a full and useful account of the diseases of the throat and nose, and their treatment.

We have been a little disappointed in one point. Seeing that this edition was published in the latter end of 1895, we think a little more weight might have been given to

the presence or absence of Löffler's bacillus in considering the diagnosis of diphtheria. The author believes that membraneous croup is a disease quite distinct from diphtheria, and gives many points of contrast, but says nothing about the bacteriological examination of the membrane. Nor, indeed, is anything said about the antitoxic treatment of diphtheria. These facts make us question whether this edition represents much advance on the previous one.

We notice that Dr. Ingals describes very fully O'Dwyer's intubation method. He prefers this in cases of diphtheria in children under five years of age; in older children he says he has found tracheotomy more satisfactory.

A number of prescriptions and formulæ for gargles, inhalations, &c., are printed at the end of the volume. There is a very good index.

We think, therefore, that this work, or at any rate the latter two-thirds of it—*i.e.*, the part relating to the throat and nose will be found useful by many physicians.

A Dictionary of Treatment, or Therapeutic Index, including Medical and Surgical Therapeutics. By WILLIAM WHITLA, M.D.; Professor of Materia Medica and Therapeutics in the Queen's College, Belfast; Physician to the Belfast Royal Hospital, &c. Third Edition. London: H. Renshaw. 1896. Pp. 1,000.

THE fact that two large editions of this work were exhausted within the space of four years is in itself the most impressive review of Dr. Whitla's work, and expresses the welcome which it has received, not at the hands of a few writers in medical journals, but at those of the Profession at large.

This edition contains a good deal of new matter. Matters of less importance have been omitted, and a large amount of new material has been introduced; the result being that this edition is larger than that of 1892 by about fifty pages. The modern methods of treatment with antitoxic serum, and extracts of various organs are fully described.

A good many prescriptions are introduced, written,

some in Latin, some in English, and some in a mixture of both languages. We could wish that Dr. Whitla had confined himself to English, at any rate in the directions as to the dosage of the medicine; such directions are, we venture to think, best written in English. Dr. Whitla's Latin also sometimes trips grammatically: "*Quattuor vicem*" is wrong. We think, too, that "*Capiat coch. mag. p. p. a.*" is not suitable for a valuable book of reference.

These, however, are very minor faults. The book deserves every praise. Ever since the first edition appeared we have kept it on our writing table, and constantly referred to its pages, and we would recommend any medical man who is not acquainted with the work to do likewise.

Formulaire des Médications Nouvelles. Par DR. H. GILLET, Ancien Interne des Hôpitaux de Paris; Chef du Service des Maladies des Enfants a la Policlinique de Paris. Avec 15 figures intercalées dans le texte. Paris: Librairie J. B. Baillière et Fils. 1896.

THIS little volume is one of a set of year-books which MM. Baillière et Fils publish. These booklets are bound and printed beautifully—indeed the printing makes us envy our Gallic neighbours. As the author says in his preface, the book treats of new remedies and new methods of application of remedies.

The arrangement of the matter is as follows:—(*a*) The principle of the method of treatment. (*b*) The nature of the medications employed and the mode of administration and dose. (*c*) Indications for the remedy. (*d*) Contra-indications for the treatment.

The space given to a subject is proportionate to its importance, and all the formulæ are essentially practical.

Articles are treated of in alphabetical order; but, nevertheless, we think a good index necessary for a book which is essentially one for reference.

Serum therapy occupies fully one-fourth of the book, and in the section on internal medication, intestinal antisepsis is very fully and clearly dealt with.

At a time when the tendency of books is to wax fat—to

become pudgy, thick, cumbersome, unhandy volumes, or to run into many volumes or parts, or to become encyclopædic, it is refreshing to come on a dainty little volume like Dr. Gillet's, which, in terse, clear language, gives you the latest and most improved methods. We heartily commend the book.

Epithélioma Primitif de l'Urèthre. Par MELVILLE WASSERMANN, Lauréat de l'Institut (Académie des Sciences); Docteur des Facultés de Medecine de Paris et de Heidelberg; Ancien Assistant de la Clinique Chirurgicale de Heidelberg. Paris: G. Steinheil. 1895.

THIS is a well-written and exhaustive monograph on its special subject. There are 163 large octavo pages, closely and clearly printed, followed by three plates, of which the third consists of two figures—each coloured. The "Table des Matières" includes:—"Introduction," "Historique Tableaux," "Anatomie Pathologique," "Etiologie," "Symptomatologie," "Diagnostic," "Pronostic," "Traitement," "Observations," "Conclusions," "Index Bibliographique," "Planches." The portion given to "Observations" constitutes the body of the volume—beginning on page 55, and ending on page 158. Forty-seven cases are recorded, some in the completest detail, and nearly all of special interest. The opening chapters give a very excellent summary of the present state of our knowledge of the subject of urethral carcinoma, and the whole volume will well repay the perusal of every practical surgeon.

Traité des Maladies de la Prostate et des Vesicules Séminales. Par le DR. HENRI PICARD. Paris: Georges Carré. 1896.

THIS monograph has been produced in a really exemplary fashion. The matter is good, there is absolutely no trace of a *preface* (!!!), the paper is excellent, the type is beautifully clear, the illustrations are numerous and judiciously chosen, and the binding—as judged by the average standard of that of our scientific text-books—is simply exquisite.

The text contains a very good summary of the present

state of our science and practice in the surgical domain of the important organ with which it deals. The writer's pathology is clear and well-grounded, and his practice has very evidently the double support of reading and personal experience. Of the recent practice of castration in cases of prostatic hypertrophy, the author speaks with a certain want of respect with which we confess to have found ourselves in sympathy. "S'appuyant sur ce fait que, chez les eunuques et ceux dont la syphilis, acquis ou héréditaire, a atrophié les testicules, ces auteurs ont proposé la castration pour les malades auxquels une trop grosse prostate cause de graves accidents. Mise en pratique à Christiania, par Ramm, en Amérique, par Francis Haynes et White, en Angleterre, par Powell, elle n'a encore été que préconisée par Launois en France, où il est douteux que l'example des chirurgiens sans peur d'Outre-Mer soit imité de sitôt."

A Guide to the Practical Examination of Urine for the use of Physicians and Students. By JAMES TYSON, M.D., Professor of Clinical Medicine in the University of Pennsylvania, and Physician to the Hospital of the University; Physician to the Philadelphia Hospital; Fellow of the College of Physicians of Philadelphia, &c., &c. Ninth Edition. Revised and Corrected. With a Coloured Plate and Wood Engravings. Philadelphia: P. Blakiston and Co. 1896.

IN his preface, which, we may observe by the way, is one of most exemplary shortness, the author informs us that "No large additions have been made to the previous edition in preparing the present. On the other hand, some less important paragraphs have been omitted, so that I have been able to keep the book to its moderate size. The usual care has been taken to secure accuracy, and some alterations have been made to this end." The volume now offered to the public consists of XII. chapters and 276 pages. The type, paper, and "general get-up" of this delightfully handy and readable text-book cannot be too highly praised. The bulk of its contents are already well known to the professional public, and do not really call for further criticism. The fact that

the author has lived to put forth a ninth edition, is, in itself, one of the highest testimonies that can be given to the value of a scientific manual, and we feel confident that a tenth will soon be called for. It thoroughly deserves it.

Pharmacopœia of the Evelina Hospital for Sick Children. Second Edition. Southwark: J. & A. Churchill. 1896.

The compilers of this booklet inform the readers in their preface that "The first issue having been sold out within a few months, it has become necessary to prepare a second edition of this small work. In the present volume the various formulæ have been carefully revised, and such additions made to them as were considered expedient." The selection of remedies is certainly a very good one, and the directions for preparation of special invalid diets—nutrient enemata, &c.—at the end, form an important item. Its 53 pages are interleaved—a practical feature which will make it specially useful to nurses and students.

Hypnotism, Mesmerism, and the New Witchcraft. By Ernest Hart; formerly Surgeon to the West London Hospital, and Ophthalmic Surgeon to St. Mary's Hospital, London. A New Edition, Enlarged. With Chapters on the "Eternal Gullible," and Note on the Hypnotism of "Trilby." With 24 Illustrations. London: Smith, Elder & Co. 1896.

The continued demand for a new edition of this little volume has persuaded Mr. Ernest Hart that he is "not wrong in interpreting this as a sign that the public at large is becoming more and more penetrated with the conviction that hypnotism, when it is not a pernicious fraud, is a mere futility which should have no place in the life of those who have work to do in the world." We are very glad indeed that this very instructive publication is again brought under the notice of the reading public. "In the present edition a chapter has been added embodying the confessions of a professional medium. Some new matter has also been placed in the Appendix." Accordingly the divisions of the contents are

now as follows:—"Hypnotism and Humbug," "Hypnotism, Animal Magnetism, and Hysteria," "Mesmerism and the New Witchcraft," "Gropings after the Supernatural," "The Eternal Gullible," "Appendix:—Reply to M. Encausse. Letters to *The Times* from the Author and Dr. Luys. Eusapia Paladino. The Hypnotism of 'Trilby.' Automatic Writing." We cordially recommend the perusal of the pages of this little volume to everyone who is interested in the improvement of the human race, and wishes to see its members redeemed from their follies.

New York County Medical Association. New York: 1895. Pp. 176.

THIS periodical publication is practically a Medical Directory for the City and County of New York. The issue before us is corrected to June 30th, 1895. Primarily it is the official list of members of the New York County Medical Association, 1,056 in number; but in another list are given the names of regular practitioners in the city and county who are *not* members of the Association. Of these there are about 1,800. Those only whose "college education has covered the whole ground of the science and art of medicine, and whose practice is founded on the accumulated experience of the profession" are enrolled in these lists. "Irregulars" are excluded—eclectics, homœopaths, faith curists, Christian scientists, clairvoyants, botanists, and advertisers of secret nostrums. Of these speckled sheep the flock is said to number 1,100. The volume contains some brief articles on professional subjects, and full information upon the objects and constitution of the Association, and of the greater corporations to which it is affiliated.

Twenty-sixth Annual Report of the Resident Medical Superintendent, and Statistical Returns of the Down District Lunatic Asylum, Downpatrick, for Year ended 31st Dec., 1895. Downpatrick: 1896.

WE are glad to receive a copy of Mr. Nolan's interesting Report on the institution of which he is in charge. We

observe that the Downpatrick Asylum, like others which could be named, suffers from repletion, It is *constructed* to accommodate 420 and *made* to hold 532 —the number of patients remaining under treatment at the end of the year. The average population was 517; in charge of two medical officers, one of whom is burdened with non-professional administrative duties. The overcrowding predominated on the "female side." "Recoveries" were 47·82 per cent. of admissions—10·32 per cent. of total number of inmates. Mortality was 5·22 per cent. of daily average, contrasting favourably with the death-rate of the previous year, in which an epidemic of dysentery had attacked 60 patients and destroyed 18. In 1895, 22 suffered from this disease and 4 died. In 35·5 per cent. of cases admitted during the year heredity was ascertained; in others, no doubt, it existed, concealed by the absence of history or the reticence of relatives. On this prevalence of hereditary taint Mr. Nolan, in great measure, founds his disbelief in the increase of insanity, of which so much is heard now-a-days. "A very considerable number of our patients," he says, "have had insane ancestors who were never certified as lunatics, and hence never figured in the statistics of insanity."

"The alarm has been raised in consequence of the universal and ever-increasing demands made upon the resources of our public asylums. The asylum, like the cancer, ophthalmic, consumption, and other hospitals for special treatment is the result of that specialism which is the characteristic of medical progress in this century; and, as in the case of those special institutions, the number of sufferers seeking relief grows with the benefits held out. There is no alarm raised, however, by official and non-official statements that cancer, and eye diseases, and lung affections are increasing by leaps and bounds; and, though every other day we read appeals for the necessary funds to enlarge the hospitals erected for their treatment, yet no one is prepared to say that any one or other of these diseases is afflicting this generation more heavily than it has done in ages past." . . . . . "Were there a real increase, it would indeed be a lamentable result of our boasted civilisation; but a little calm reflection enables us to dismiss the terrifying thought and leads us to the conclusion that the increase is in our enlightenment, and not in the disease, and our greatest

misfortune is that we are called on to pay the pecuniary penalty of our progress."

Another cause which crowds our asylums is pointed out in the following passages; and for this, we fear, there is no remedy:—

"Had my efforts in some cases been supported by the relatives patients, the number resident would have been still further reduced. Unhappily, however, the discords set up in a family circle by the occurrence of insanity in one of its members very frequently outlive the attack which excites them. In some cases the endurance of the household has been worn out by the strain and worry of taking care of the afflicted member for a long period prior to admission to the asylum, and there is no wish to run the risk of further trouble. In other cases, again, there is an evident determination to convert, if possible, the temporary separation into a veritable divorce, and nothing can induce the sane partner to take up again the burden. . . . Worse still, I have in mind cases in which discharged patients have been worried into a relapse by deliberately unkind treatment on their return to a hostile household."

Some Prolegomena to a Study of Medicine. By GILES F. GOLDSBOROUGH, M.D., President of the British Homœopathic Society; Assistant Physician to the London Homœopathic Hospital. London: John Bale & Sons. 1896. Pp. 66.

THE dose of homœopathy entering into this expanded "presidential address, delivered before the British Homœopathic Society," is infinitesimal, and it may be read with interest and pleasure by any of us. Indeed, if all "convinced homœopathists" were as little homœopathic and as little aggressive as Dr. Goldsborough, the expression of ingenuous wonder with which he opens would be almost justifiable. He is perplexed to find that "the majority of the profession refuse medical reform in the direction of an avowed and general adoption of the homœopathic rule or method." We are "open to advances in knowledge in all other branches," but refuse "even to inquire into a method, which is really simple when once conceived, practically

universal as far as the uses of drugs are concerned and verified by the experience of a large body of medical men throughout the world." We venture to say that we are all willing to learn, and willing to adopt "*similia similibus*" as a therapeutical principle of universal applicability if "our friends the enemy" will demonstrate its efficacy, or if our own experimental researches convince us. Neither has yet been done. It is unquestionable that study of the homœopothic method has been impeded by the persistency with which the essential principle of modern homœopathy has been colligated with two other dogmas—the Infallibility of Hahnemann and the "pernicious nonsense" of infinitesimals and potentials and dynamisations. These things we refuse even to discuss, and homœopathists themselves are dropping them.

We are in large measure indebted to Hahnemann for what our author calls the "science of drug pathogenesy." He was among the first to urge the application of the experimental method to the ascertaining of the effects of drugs. "There is," he says, "no other possible way in which the peculiar effects of medicines on the health of individuals can be accurately ascertained . . . than to administer the several medicines experimentally, in moderate doses, to healthy persons, in order to ascertain . . . what disease elements they are able and tend to produce, since . . . all the curative power of medicines lies in the power they possess of changing the state of man's health, and is revealed by observation of the latter." There is some truth in Dr. Goldsborough's assertion that "the leaders of medicine in the nineteenth century have seen only the mistakes" of Hahnemann. There is some excuse for their blindness. The mistakes were "gross and palpable," and Hahnemann's disciples have (until recently) clung to them tenaciously. In the essay before us we are told that—

"The limitation of the dose must not be pursued so far that there is danger of the patient not having any medicine at all. This question can only be decided by two lines of inquiry—(1) By experiment as to how far drugs can be divided by mechanical means, and yet have some of the substance remaining in the vehicle of division and administration. (2) By a collection of authenticated

cases where drugs have been administered in a very high state of dilution, and the effects noted and compared with those which have had other doses administered, and with those which have had none at all."

All this is "flat blasphemy" against Hahnemann; and we fear Dr. Goldsborough is "very far gone from original righteousness." We noted another symptom. We did not observe any passage in reading which we felt called upon to writhe under the epithet of "allopath."

THE WILLIAM F. JENKS MEMORIAL PRIZE.

THE Fourth Triennial Prize, of Four Hundred Dollars, under the Deed of Trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "The Etiology and Pathology of Diseases of the Endometrium, including the Septic Inflammations of the Puerperium." The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with Obstetrics, or the Diseases of Women, or the Diseases of Children;" and that "the trustees, under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia." The prize is open for competition to the whole world, but the essay must be the production of a single person. The essay, which must be written in the English language—or, if in a foreign language, accompanied by an English translation—must be sent to the College of Physicians of Philadelphia, Pennsylvania, U.S.A., before January 1, 1898, addressed to Barton Cooke Hirst, M.D., Chairman of the William F. Jenks Prize Committee. Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The Committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

PART III.
SPECIAL REPORTS.

REPORT ON PUBLIC HEALTH.*

By Sir Charles A. Cameron, M.D.; D.P.H., Camb.; M.R.C.P.I.; F.I.C.; Ex-President, Hon. Dip. Public Health, and Professor of Hygiene and Chemistry, R.C.S.I.; Vice-President and ex-President of the British Institute of Public Health, and of the Society of Public Analysts; Medical Officer of Health for Dublin; Hon. Member of the Hygienic Societies of France, Belgium, Paris, and Bordeaux, the Academy of Medicine, Sweden, and of the State Medical Society of California, &c.; Examiner in Sanitary Science, Royal University of Ireland; Member of the Army Sanitary Committee.

PREVALENCE OF DIPHTHERIA IN LONDON AND ELSEWHERE.

A very valuable report on the prevalence of diphtheria in London and elsewhere has just been presented to the London School Board by their distinguished medical officer, Professor Robert W. Smith, M.D. The Report was prepared in response to a request from the Board that Prof. Smith would investigate the alleged connection between diphtheria and the elementary schools. The report is rendered peculiarly interesting by the historical account of diphtheria, and the elaborate statistics in reference to that formidable disease which it contains. In the opinion of Dr. Smith the disease was known and described even in the times of Hippocrates and Galen. He considers that the great epidemic of sore throat in England in 1389 was diphtheria.

The almost complete disappearance of diphtheria in England during the first half of the century is a curious fact. In France, during that period, it occasionally disappeared, but about the period of the Crimean war it assumed epidemic proportions. It is only since the year 1855 that the Registrar-General of England has differentiated diphtheria from other diseases; before that year it was generally con-

* The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

founded with scarlet fever. The following table shows the mortality caused by this disease since 1855 :—

Table showing the death-rate per million of the population from Diphtheria in England and Wales since 1855 *and in London since* 1859 :—

Year	England and Wales — Death Rates per Million	London — Death Rates per Million	Year	England and Wales — Death Rates per Million	London — Death Rates per Million
1855	20	—	1876	129	109
1856	32	—	1877	111	88
1857	82	—	1878	140	155
1858	339	—	1879	120	155
1859	517	284	1880	109	144
1860	261	174	1881	121	172
1861	225	239	1882	152	222
1862	241	255	1883	158	244
1863	315	275	1884	186	241
1864	261	207	1885	164	227
1865	196	144	1886	149	212
1866	140	152	1887	160	235
1867	120	145	1888	171	319
1868	137	158	1889	189	391
1869	117	107	1890	179	331
1870	120	104	1891	173	340
1871	111	105	1892	222	462
1872	93	80	1893	318	760
1873	108	95	1894	292	625
1874	150	122	1895	253	529
1875	142	167			

Note.—The Infectious Diseases (Notification) Act came into operation in London in Oct., 1889.

The steady increase of the disease is shown by the following statistics. In the decade 1871–80, the mortality per million of inhabitants of England and Wales was 121, and in London 122. Since that period the disease has steadily increased in London. In 1881–90 it caused a death-rate of 163 per million of population in England and Wales, and 260 in London. In the period 1890–95, the deaths per million in England and Wales were 252, and in London 543. The high death-rate from this disease in London raised the rate of mortality in the country at large, and the rate in England and Wales, minus London, was therefore much lower in 1890–95 than 252. These figures are taken from the reports of the Registrar-General. If we compare some of them with the figures taken from the

Dublin mortality statistics, it will be seen to what a trifling extent diphtheria exists in Dublin.

Mortality per million from diphtheria in England and Wales, London and Dublin, 1890–95:—

England and Wales	London	Dublin
252	543	—

If Dublin has a higher mortality from enteric fever than London, their position is more than reversed as regards diphtheria. When diphtheria became prevalent in England it was twice as common in the sparsely-populated districts as in the most populous ones; of late years the reverse obtains. No satisfactory explanation of this change in the incidence of the disease is given.

The following table, prepared by Dr. Shirley Murphy, Medical Officer of the London County Council, shows that diphtheria is chiefly a disease affecting children, especially those under 5 years:—

Diphtheria death-rates per 1,000,000 *living at various age-periods.*

Period	All ages	0-1	1-2	2-3	3-4	4-5	5-6	10-15	15-20	20 and upwards
England and Wales										
1855–60	178	542	743	706	776	723	414	172	68	22
1861–70	184	581	909	803	832	736	393	136	59	26
1871–80	121	287	489	483	580	547	291	88	33	17
1881–90	163	282	685	773	896	848	424	100	36	17
London										
1855–60	126	563	778	652	624	511	232	76	31	18
1861–70	176	755	1,197	1,060	912	715	296	64	35	26
1871–80	122	318	573	628	695	660	289	55	24	17
1881–90	260	534	1,533	1,598	1,750	1,553	601	96	32	20

A curious feature of this table is the much greater increase of diphtheria amongst children from 3 to 10 years old. Dr. Shirley considers that as children of these ages attend school, it shows that the latter has some influence upon the disease. Dr. Smith, however, does not take this view. In order to test its correctness he says:—

"It is not enough to begin by grouping the facts under the ages 0–3 and 3–10; it is necessary to ascertain what is the age-

grouping under which each set of facts most naturally falls. For instance, if it were found that the age of school attendance practically begins at 4 years, and that the special liability to diphtheria begins at 2 years, there could be hardly a doubt that the two things are independent. In such a case, the age-grouping 0–3 and 3–10 would only suggest false conclusions.

"The *average* numbers of children at various ages on the rolls of the London School Board in the four years 1892–95 were as follow:—

Under 3 years - -	403
3 years and under 4 -	13,072
4 „ „ „ 5 -	30,069
5 „ „ „ 6 -	46,624
6 „ „ „ 7 -	53,460
7 „ „ „ 8 -	55,823
8 „ „ „ 9 -	53,512
9 „ „ „ 10 -	54,388
10 years and upwards -	172,935
All ages -	480,286

"The average number of children in London living at age 3–4 may be taken as about 102,000; so, obviously, a very small proportion of children at this age are subject to the risk of school infection, and it is more correct to speak of 4 years instead of 3 years as the age at which school attendance commences. We should therefore expect that any tendency to school infection would show itself in a marked manner at age 4."

Dr. Smith quotes the opinion of several medical officers of health of large towns in favour of the view that schools have no sensible influence upon diphtheria. Dr. Hill, of Birmingham, states that in the holiday time there was sometimes an actual increase of the disease. A similar observation was made by the Medical Officer of Health for Manchester. The following are Dr. Smith's conclusions and recommendations:—

"CONCLUSIONS.

"The conclusions at which I arrive from a consideration of the the foregoing, are:—

"1. That diphtheria has always been more prevalent in the

south-eastern counties of England than elsewhere, and from them it spread to London, whilst it still maintained its prevalence in them, such counties as Staffordshire, Durham, and Lancashire (the congenial home of most zymotics) being comparatively free.

"2. The recrudescence of the disease in 1881–90 was greatest in England and Wales at the age 2 to 3 years, and in London at the age 1 to 2 years, in both cases *before school age.*

"3. The diagrams I. and II. show that the notifications of diphtheria in London increase *rapidly* after age 1 year is reached, and go on increasing until the beginning of school age, when a decrease sets in. This shows that *age* as an absolute factor in the incidence of the disease is enormously more active than any school influence.

"The notification rates are *nearly constant* through the age period 3 to 6 years, but practically school attendance does not begin until *near the middle* of this period, *i.e.*, some time after age 4 is reached.

"4. If separate districts of London be examined, the same state of things is noticed, viz., the period of greatest liability to the disease *begins* before school age is reached, and, therefore a principle of *ante hoc ergo propter hoc* is required if the age incidence of the disease is to be explained by school attendance. In some of the poorest metropolitan districts the special liability to diphtheria commences at a still earlier age than in other parts of London, suggesting overcrowding as a probable potent cause.

"5. The variations of diphtheria during and after school holidays undoubtedly suggest that some amount of infection takes place at school (which no one disputes), but taking the year 1895 in which a remarkable fall occurred in the holidays, the fall was found to affect children of non-school ages almost to the same extent as children of school age, and the fall was not shared in (or only very slightly) by the poorest districts. It is probable then that such variations are in great measure explained by the smaller number of children in London during the holidays.

"6. The remarkable similarity of the age incidence of mortality in Berlin to that in London—although school age begins at quite a different time—strengthens the conclusion already expressed, that age, not school attendance, is the chief factor in the incidence of the disease.

"7. The progressively greater liability of girls as compared with boys—in relation to age—points to personal contact as another important source of infection.

"8. The comparative immunity of infants under one year of age, suggests that older children often infect one another at night,

young infants being removed from this risk by sleeping with their parents.

"9. That, as the result of a special inquiry into 2,168 consecutive cases, a very small number of cases could be traced to even a possibility of school infection.

"10 That school influence, as such, plays but an unimportant part in the enormous increase of the disease during recent years in London.

"RECOMMENDATIONS.

"The recommendations which I suggest should be adopted with the object of reducing the possibility of school infection to a minimum are:—

"1. In view of the fact that children suffering from sore throat are thereby more predisposed to diphtheria, and further that a slight case of sore throat may be of a diphtheritic nature, I would recommend that all children suffering from sore throat should be excluded from attendance at school, and an intimation of such exclusion given on a printed form to the medical officer of health for the district.

"2. With the view of determining without delay whether such sore throats are of a diphtheritic nature, it is most desirable that there should be the means provided at the disposal of the local sanitary officials for this purpose. Such means should embrace the opportunity for a bacteriological examination, and it would appear most convenient that such should be provided by the Metropolitan Asylums Board, as the central authority dealing with the treatment of infectious disease in the metropolis. This would have a two-fold advantage:—

"(1) The School Board for London could thus obtain reliable information whether the case of sore throat was of a diphtheritic nature; and

"(2) If the case were of a diphtheritic character, it would be amenable to proper treatment — by prompt removal to hospital — at the earliest possible moment; a point which has been shown by the statistics just published by the Superintendents of the Fever Hospitals of the Metropolitan Asylums Board, to be of the greatest possible value in the application of the anti-toxic serum treatment.

"3. It would appear necessary that the attention of the Metropolitan Medical Officers of Health should be pointedly drawn to the duty imposed upon them by the Public Health (London) Act 1891,

Section 55 (iv.), to send within twelve hours a copy of the notification certificate to the Head Teacher, as the experience of the Board is that undue delay has frequently taken place in this respect, with the consequences that children coming from infected houses have remained for days in attendance at school.

"4. The attention of the teachers should likewise be drawn to your Board's "Code of Regulations and Instructions for the guidance of Managers, Correspondents and Teachers" (Article 148), requiring them to exclude from attendance at school all children coming from infected houses, to endorse on the certificate the action taken, and to forward the same to the Medical Officer at the School Board Offices, so that a proper ledger account may be kept of the amount of infectious disease in connection with the schools of the Board.

"5. The desirability of promoting legislation, for providing that the Medical Officer of Health shall furnish a certificate to the Head Teacher informing him when children thus excluded may be re-admitted to school."

In the valuable report of the New York State Board of Health for 1894, which I have just received, it is stated that diphtheria caused 5·5 per cent. of the total mortality. The deaths per 100,000 of the population ascribed to this disease were 96. In the maritime provinces the rate was 145 per 100,000, and in the other provinces 45 per 100,000. The disease is more prevalent in the city than the country.

RELATION BETWEEN THE BACILLUS TYPHOSUS AND BACILLUS COLI COMMUNIS.

In a paper by Professor M'Weeney and myself, read at the Public Health Congress held under the auspices of the British Institute of Public Health at Edinburgh, in 1893, a description was given of an organism intermediate between the typhoid bacillus and the Bacillus coli communis. It occurred in a well-water at Milltown, County of Dublin, and there was some reason to suppose that it was connected with an outbreak of fever of the enteric type. This organism, under cultivation, behaved in a manner intermediate between that of the typhoid bacillus on the one hand and the B. coli communis on the other. This behaviour was not what would be observed in the case of a mixed cultivation of bacilli of

typhoid and B. coli communis, for many characteristic reactions of both of these micro-organisms were absent.

In an address at the Sanitary Institute's Congress in Liverpool, in 1894, Professor Klein criticised this paper, and expressed the opinion that there were no transitional forms between Eberth's bacillus and the B. coli communis. This opinion is at variance with that of Drs. Roux and Rodet, bacteriologists of great reputation. They believe that under certain not clearly ascertained conditions the B. coli communis may assume a virulent form, and become in fact. Eberth's bacillus. I have no doubt myself as to the existence of transitional forms between the B. coli communis and the Eberth-Gaffky organism. Cassedebat has found in polluted water several species of bacilli which reacted in almost every respect like the typhoid bacillus, but still there were a few points of difference. The typhoid bacilli are cultivated in milk without coagulating that liquid, but producing an acid reaction in it. Cassedebat found that certain "pseudo-typhoid bacilli" acted similarly.

Messrs. T. H. Pearman and C. G. Moor, M.A., in the *Analyst* for May, 1896, give, in the following concise table, the main points of difference between typhoid bacilli and B. coli communis:—

The growths make their appearance on the gelatin media at room temperature after from forty-eight to sixty hours. The agar-agar, potato, milk, and broth tubes are incubated at 37° C. (blood-heat) for three days.

From the accompanying table it is seen that the *B. coli communis* is readily distinguished from the *B. typhosus* by its cultural characteristics, and particularly by its chemical reactions. The colon bacillus invariably grows more rapidly than the typhoid bacillus.

The colon bacillus when grown in alkaline peptone broth produces a red coloration on the addition of nitrous acid, depending upon the interaction of nitrous acid with indol, which is one of the products of the metabolism of the organism, to form nitro-indol, which is of a red colour. This test is best applied as follows:— To 10 c.c. of the culture of the organism under examination, which has been incubated at blood-heat for not less than twenty-four hours, is added 1 c.c. of a 0·02 per cent. solution of sodium nitrite, and then a few drops of pure concentrated sulphuric acid. If indol is present, a rose to deep red coloration is produced.

The foregoing reaction, together with the power of the *B. coli communis* of coagulating milk and the formation of gas in nutrient gelatin, provide an easy method of distinguishing this organism from the *B. typhosus.*

Media	Bacillus typhosus	Bacillus coli communis
Gelatin plates -	The colonies on the surface form large grayish-white expansions with irregular edges, and after a time become somewhat yellowish-brown. The depth colonies are darker, with regular edges. Under a low power the colonies exhibit a characteristic woven structure. The gelatin is not liquefied.	The colonies are round and oval, with smooth-rimmed margins. The surface-colonies form dirty-white expansions, which, on magnification, exhibit a furrowed appearance. The colonies later become dirty yellowish-brown in colour. The gelatin is not liquefied.
Gelatin "streak" culture - -	Produces a grayish-white expansion with irregular edges. The growth has a tendency to keep to the inoculation streak, and often has a bluish iridescence.	Dirty yellowish-white expansion, which spreads all over the surface of the media, and often has a bluish iridescence when viewed by transmitted light.
Gelatin "shake" culture - -	No gas bubbles.	Copious gas formation.
Agar-agar "streak" culture - -	Grayish-white expansion, which covers the surface of the medium	Dirty yellowish-white expansion, which spreads over the surface of the medium.
Potatoes - -	Generally a faint grayish-white growth; the growth varies, however, on different potatoes.	Slimy yellowish growth.
Milk - - -	Turns faintly acid. No coagulation takes place.	Curdled after one to three days.
Broth - - -	Rendered turbid, and gives no indol reaction.	Rendered turbid, and gives a well-marked indol reaction after from twenty-four to forty-eight hours.
Formalin broth (1 : 7,000) - -	No growth.	Growth.

Dr. Elsner, of Berlin, has detected Eberth-Gaffky's bacillus in the dejecta of a nurse who was in attendance on typhoid fever patients. From this remarkable observation we learn (1) that the introduction of the organism into the human system does not necessarily cause fever; (2) that the dejec-

tions of a healthy person may infect water, &c., with the poison of enteric fever.

PREMATURE DISCHARGE OF FEVER PATIENTS.

Complaints having been made in London that by the premature discharge of fever patients from hospitals, infective diseases broke out in many households, a sub-committee of the General Purposes Committee of the Metropolitan Asylums Board was appointed to investigate this subject. They made inquiries from the Metropolitan Medical Officers of Health as to the outbreaks of illness in houses after the return of patients from hospital, and learned from those officials that only 165 cases of alleged infection from discharged patients were recorded. Of these cases 49 occurred in the first half of 1895 and 116 in the years 1891–94. During this period 30,227 patients who had suffered from diphtheria and scarlet fever had been discharged from the Board's hospitals. A circular letter addressed to the superintendents of 52 hospitals for infectious diseases elicited the following information. Average number of days scarlet fever (excluding fatal ones) cases were returned :—

	Beds	Days		Beds	Days
Leicester, -	150	37	Warrington, -	60	50
Bradford, -	200	41	Newcastle, -	149	50
Aberdeen, -	200	41	Bath, -	90	51
Wakefield, -	41	42	Sheffield, -	91	52
Ditto, -	43	42	Brighton, -	110	53
Bury, -	50	43	Nottingham, -	150	53
Leeds, -	64	44	Glasgow, -	800	53
Exeter, -	50	45	Edinburgh, -	320	53
Huddersfield, -	78	46	Watford, -	49	53
South Shields, -	54	47	Eastbourne, -	40	54
Portsmouth, -	68	47	Liverpool (City		
Bristol -	44	48	Hospital North)	80	[a]56
Gloucester, -	48	48	Hull, -	200	61
Darlington, -	90	48	Bromley, -	70	66
Stockport, -	60	49	Hastings, -	61	68
Plymouth, -	50	49	Birmingham, -	300	72
Southampton, -	40	49			

[a] For 1894.

As regards diphtheria, the following returns were obtained from 53 hospitals:—

	Days		Days
Hull, - -	18	Aberdeen, - -	23
Watford, - -	19	Portsmouth, -	27
Hastings, - -	21	Plymouth, - -	28
Bromley, - -	22	Edinburgh, - -	28
Brighton, - -	22	Gloucester, - -	33
Eastbourne, -	22	Bath, - -	34
Sheffield, - -	23	Stockport, - -	42

In the case of the remaining 18 hospitals, the number of diphtheria patients received was too few to admit of any reliable statistical information being given.

As regards the Board's own hospitals, it appears that in the North-Eastern Hospital the patient, before being discharged, is thoroughly washed all over with carbolic soap in one room and then wrapped in flannel, is taken into another room. Here he puts on the clothes in which he is to return home. The clothes brought into the patient are disinfected in Lyons' steam steriliser. As a rule—

"Scarlet fever patients at this hospital, when convalescing, are removed to wards set apart for convalescents, unless they are babies, or are suffering from other infectious diseases, and that as convalescents they are bathed three times a week. That every patient is carefully examined two days before the date fixed for discharge; that on the evening of the day on which the selection for discharge is made the patient has a bath, this bath being repeated on the following morning, after which he is transferred to the wards set apart for discharged purposes, when the patient has another bath, is put to bed in clean clothes, and remains in bed the following morning till the relatives arrive with his own clothes, when the patient is handed over to his relatives in the waiting room."

According to Dr. Bruce, no patient is discharged from the Western Hospital until desquamation is completed, discharge from the nose or ears has ceased, and the throat is found to be free from any sign of inflammation. Cases of chronic otorrhœa or rhinorrhœa are detained for at least three months. Dr. Caiger states that in the South Western Hospital the following precautions are taken:—

"The home clothes which are brought up by the parent are taken in at the egress door of the passage into which the third, or dressing-room, opens. They are then placed in one of the numbered pigeon-holes fixed in this passage until just before the individual patient enters the dressing-room after he has had his bath. His clothes are then taken into this room, and he is at once dressed in them. The patient, having discarded his infected clothing before taking his bath, enters the dressing-room covered only by a blanket. The home clothes are thus kept entirely separate from the infected ones.

"To effect disinfection of the person, the patient is thoroughly bathed in warm water to which a teacup full of creolin has been added. The body is washed all over with creolin soap, including the hair. Exemption is not even permitted to adult females, who, in cold weather, are usually detained in front of the fire in the dressing-room until the hair is reasonably dry.

"If, at the time of his discharge, a patient is subject to a chronic discharge from the ear, the ear is syringed out in the bath-room with a solution of creolin with the object of disinfecting the auditory canal. If there be any discharging wound, this is freshly dressed after bathing."

Dr. Hume, of the Northern Hospital, states the patients, when their discharge is under consideration, are bathed and examined by the nurse, and then presented to the doctor. A careful and prolonged examination then follows, the condition of the skin, mucous membrane, hair, mouth, nose, ears being thoroughly scrutinised. Should the doctor order the patient's discharge, removal does not take place until 48 hours later, and until he actually leaves he is kept under strict observation.

The Sub-Committee are of opinion that it is probable the recurrence of fever in the same household is sometimes due to imperfect disinfection. In a previous Report on Public Health in this Journal I gave statistics as to the means of disinfection in a large number of English towns. I pointed out that they were in many towns very defective, and that even in towns of considerable size the exploded system of disinfection by hot air was still in use.

The Sub-Committee of the Asylums Board, in their report, condemn the practice which still prevails in some London districts of having the disinfection performed by a contrac-

tor. They point out that in only 22 of the 42 metropolitan sanitary districts steam sterilisers had been provided at the end of 1894. In Lambeth dry heat was employed, the maximum temperature only reaching to 100° F.! In Fulham a contractor keeps infected bedding in a chamber for only 10 to 20 minutes.

STATE OF PUBLIC HEALTH IN ENGLAND AND WALES IN 1895.

The perusal of the Annual Summary of births, deaths, and causes of death in London and elsewhere, 1895, just issued from the office of the Registrar-General of England, will afford much interesting information to the vital statistician, so also will the perusal of the Quarterly Return of Births and Deaths in the first quarter of the present year. The population of the United Kingdom is now estimated to be 39,463,697; Ireland contains 4,547,756 of this population, and Scotland 4,186,849. In the first quarter of the year the birth-rate was 28·6 and the death-rate 17·9 per 1,000.

In the first quarter of 1896 the excess of births over deaths was 85,842; 26,713 emigrants embarked for places outside Europe. Making a deduction for emigration, the increase of population in the quarter was 59,129. This increase of the population was independent of that caused by a considerable influx of immigrants and returned colonists. The proportion of the population in receipt of poor-law relief was 2·43 per cent. The statistics relating to London are simply wonderful. The population of this by far the largest city of ancient or modern times has now swollen to 4,392,346. This is, however, only the population of "inner," or registration London, which, with the exception of the small parish of Penge, is co-extensive with the administrative county of London. "Greater London" is that embraced within the metropolitan and city police districts, and it contains the enormous population of 6,048,555.

In 1895 the death-rate in Greater London was 18·4 per 1,000, that of Inner London was 19·8, and of the Outer Ring 14·5. The infantile mortality was 159 per 1,000 births in Greater, 166 in Inner, and 141 in Outer London.

In Inner London 13·5 per cent. of the deaths occurred in workhouses and workhouse hospitals, 1·9 per cent. in the

Metropolitan Asylum hospitals, 9·4 per cent in other hospitals, and 2 per cent. in public lunatic and imbecile institutions. In 1895, 32·6 per cent. of the deaths in Dublin occurred in the workhouses, hospitals, prisons, and lunatic asylums. In London the deaths in similar institutions were 26·8 per cent. of the total deaths. In 1895 the death-rate from the principal zymotic diseases was 2·46 per 1,000 in Greater London, 2·64 in Inner London, and 1·98 in Outer London. In Dublin the zymotic death-rate in 1895 was 1·9.

The birth-rate in 1895 in Inner London was 30·5, and is the lowest on record. The births exceeded the deaths by 46,778.

The statistics relating to the 33 largest towns (including London) show that the aggregate population amounts to 10,591,530. Their mean birth-rate in 1895 was 31·3, and their death-rate 20·7. Croydon had the lowest death-rate—namely, 14·5, and Liverpool the highest—28·8 per 1,000. The zymotic death-rate was 2·84. It varied from 1·2 in Huddersfield to 5·63 in Blackburn. The populations of the 33 towns, excluding London, varied from 85,780 in Wolverhampton to 524,856 in Manchester.

The statistics in 67 other towns are given. Their aggregate population is 3,661,935, and none of them contain less than 34,000 inhabitants. Their mean death-rate in 1895 was 18·7 and the zymotic death-rate 2·4. The latter ranged from 0·62 in Bath to 5·85 in Barnsley. The birth-rate was 31·1.

From the Quarterly Return of Births, Deaths, and Marriages of the English Registrar-General for the first quarter of 1896 we learn that the birth-rate was 29·1. It varied from 23·4 in Wiltshire to 34·5 in Durham. In the 33 *largest* towns it was 30·4, and in the 67 *large* towns it was 29·9. The deaths in England and Wales were in the ratio of 17·9 per 1,000. This shows a lower rate than has ever been recorded. In the 33 largest towns the rate was 19·5, and in 67 other large towns 17·7. The zymotic death-rate was 2·02, as compared with an average of 1·74 in the corresponding quarters of the previous 10 years. In the 33 great towns the rate was 2·96, and in the 67 other towns 2·39. In Dublin the rate was only 1·1.

The statistics published[a] by Dr. Shirley Murphy, the able Medical Officer of the London County Council, are extremely interesting. The population of the administrative County of London is, estimated to the middle of 1896, 4,370,135. The area comprises no fewer than 43 "sanitary districts," with populations varying from 12,984 in St. Olaves, Southwark, to 331,900 in Islington. The resident population of the City of London has now fallen to 34,832. The birth-rate varied from 15·1 per 1,000 inhabitants in the "City" to 45·8 in St. Luke's, the mean rate for all the districts being 30·1. For every 100 females between the ages of 15 and 45 there were 11·35 births.

In 1894 the death-rate was only 17·4 per 1,000, being the lowest recorded since 1841. The zymotic death-rate was 2·66, ranging from 0·85 in Stoke Newington to 4·95 in St. George in the East. In 1894, 11,204 cases of diphtheria were notified, compared with 13,712 cases in the previous year, and 8,368 in 1892. In 1894 this disease caused 2,642 deaths, or a rate of 61 per 10,000 persons. In Dublin (city) this disease, in 1894, caused a mortality of only 0·3 per 10,000. It is startling to find that, in 1893, 74 out of every 10,000 people in London died from diphtheria, and that 260 of them had the disease. In Stockholm the death-rate in the period 1884–93 ascribed to this disease was 970 per 10,000, and in New York 102. We are very fortunate in Dublin as regards diphtheria. In 1894 the death-rate ascribed to it (in the city) was only 0·3 per 10,000.

REMOVAL OF FILTH FROM TOWNS.

Dr. Philip Boobbyer, the able Medical Officer of Health for Nottingham, has published an interesting pamphlet on the "Conservancy and Water Carriage Systems for the removal of Excreta, in 78 towns of Great Britain and Ireland." Three systems prevail in British towns—1st. The privy or midden system; 2nd, the pail system; and 3rd, the water carriage plan. Until about a dozen years ago, the privy system was the only one in the tenement houses in Dublin, and in many of the houses inhabited by the better classes. Since

[a] Annual Report of the Medical Officer of the Administrative Council of the County of London, 1894. Edward Stanford, 26 Cockspur-street, London.

then I have done everything in my power to abolish these stores of filth and substitute for them the water carriage system of filth removal. There are now very few privies in Dublin. The w.c.s in the tenement houses are, with few exceptions, situated in yards and not within the houses. They are very often subjected to bad treatment and are frequently out of order, but, on the whole, they are a vast improvement on the old system. I have discouraged the use of the trough form of closet, which has many disadvantages, though, no doubt, it is not so easily put out of order as the washdown closets. For tenement houses I prefer the Shanks pedestal closet to any other. The lip of the pan is broad and rounded, and can be used without a wooden seat. Closets used by more than one family are generally badly kept, the wood work being wet and often filthy. If a Shanks closet without any wood work is placed on an asphalted floor, we have then the best form of w.c. for the lowest class of dwellings.

Dr. Boobbyer gives the following list of towns in which the conservancy system still extensively prevails:—

Name of Town	Population	Number of Midden Privies[a]	Number of Pail, and other like Closets
Accrington - -	40,500	800	2,800
Aston-Manor - -	72,898	10,000	—
Barnsley - -	35,427	3,891	—
Belfast - -	275,000	30,000	—
Birmingham - -	492,301	11,500	33,000
Bolton - -	118,303	14,700	6,759
Bradford - -	223,985	30,000	—
Burnley - -	90,000	4,684	904
Burton-on-Trent -	47,500	3,817	4,576
Chatham - -	31,657	3,500	—
Darlington - -	38,060	6,087	191
Darwen - -	36,000	30	6,946
Derby - -	98,795	7,275	4,777
Dudley - -	47,000	5,000	37
Gateshead - -	85,692	6,000	10,000
Halifax - -	92,000	1,500	13,373
Hanley - -	56,547	3,270	3,440
Huddersfield - -	98,511	2,000	15,000

[a] There are two privies to one pit in most cases.

Name of Town	Population	Number of Midden Privies [a]	Number of Pail, and other like Closets
Hull - -	212,679	47,500 (of all sizes)	100
Ipswich - -	58,610	9,600	90
Leeds - -	388,761	17,214	1,413
Leicester - -	184,547	2,080	7,639
Manchester - -	515,567	12,525	78,726
Middlesboro' - -	80,300	3,400	8,195
Newcastle-on-Tyne -	201,947	2.900	4,300
Norwich - -	105,000	12,000	3,500
Nottingham - -	223,580	500 (cir.)	40,253
Oldham - -	138,000	76	23,381
Preston - -	111,425	20,000	—
Rochdale - -	71,401	120	13,593
St. Helen's - -	77,690	5,021	6,727
Salford - -	205,828	13,983	8,990
Scarboro' - -	33,776	8,000	—
Sheffield - -	338,316	20,000	—
Smethwick - -	36,170	8,414	—
South Shields - -	87,045	11,150 (of all sizes)	—
Stockport - -	73,000	6,000	—
Stoke-on-Trent -	26,000	4,364	—
Tynemouth - -	47,175	2,000	3,000
Wakefield - -	33,146	1,847	1,274
Warrington - -	49,124	30	10,506
West Bromwich -	60,000	7,000	—
Widnes - -	30,612	5,102	—
Wigan - -	57,000	64	8,400
Wolverhampton -	85,000	—	14,000
York - - -	67,926	7,787	61

Dr. Boobbyer says that London, Liverpool, Edinburgh, Dublin and Bristol are the large centres of population which have ordinary single w.c.s almost exclusively for use both inside and outside of houses. The sanitary authorities seem nearly everywhere to be in favour of water carriage or flush w.c. system. Hull, Rochdale, Warrington, and Darwen are the only towns included in Dr. Boobbyer's inquiry in which a continuance and extension of the pail system is advocated and practised.

[a] There are two privies to one pit in most cases.

Dr. Boobbyer says:—

"Conservancy systems on a large scale and in populous districts have had their day. Their place must be taken by some form of water-carriage. Of all closets, the ordinary single w.c. is undoubtedly the best from a sanitary point of view, and it is clearly the only admissible form for the interior of houses; it is scarcely suitable, however, for the poorer class of house property, and when used in the open air, except where carefully protected, is liable to occasional injury from frost, although this liability would appear to be exaggerated in popular estimation. The best patterns of w.c.s are the 'wash-down' and the 'valve." 'Automatic slop- or waste-water closets' are not liable to injury from frost, are not easily disordered or damaged by rough usage, are not so readily choked as w.c.s, and utilise the domestic waste-water for flushing purposes. They are, therefore, mechanically viewed, at any rate, eminently suitable for rough and poor neighbourhoods in towns where sewage-farms and water-supplies have to be considered. 'Automatic water-latrines or trough-closets' have many of the mechanical advantages of the waste-water closets, especially for poor neighbourhoods and public institutions, without their offensiveness. They are, however, liable to occasional disturbance and injury from frost—their troughs and flushing cisterns being in most cases above ground—and they require a special (clean) water-supply. Both the last two varieties of closet continue to find favour in those places where they have been most used, and are, therefore, best known. It is, however, absolutely essential to the satisfactory working of both (and of ordinary water-closets also, where these are used for poor neighbourhoods) that a staff of men should be kept by the Sanitary Authority to look after them."

ARMY MEDICAL STAFF.

A COMPETITIVE examination for twenty-five commissions in the Army Medical Staff will be held on the 7th of August next and following day. Particulars will be found in our advertisement pages.

WHOOPING-COUGH.

THE following is M. Eschilés' prescription for whooping-cough in children:—Infusion of belladonna leaves, 90 parts; phenazonum, 1 part; syrup of raspberries, 30 parts; mix. To an infant five years old give a teaspoonful every two hours.—*La Revue Médicale.*

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ULCERATION OF SEPTUM NASI.

Dr. H. S. Purdon, Belfast, writes as follows :—

"May I be allowed to supplement my paper in the *Dublin Journal of Medical Science*, on 'Ulceration of the Septum Nasi,' published in the number for April, 1896 (page 312), in which I stated that my own observations were derived from cases of either lupus or syphilis, by now calling attention to ulceration and perforation of the *septum nasi*, as a not uncommon complaint in workers amongst *chromium compounds*, which are largely used by dyers and chemical manufacturers in the production of chrome salts. A chief source of chromium compounds is the natural chromic ironstone, 'the dust generated by its preparation for further process, by its action on the mucous membrane of the nose, sets up ulceration, and usually also perforation of the septum, but without pain or destruction of sense of smell. An occurrence of precisely the same character has been already noticed among cement workers, and this fact casts doubt upon the belief that chrome dust exerts a specific effect in inducing the lesion. Again, in making chromate of potash, minute portions of the salt are carried into the nostrils where they cause ulceration of the mucous membrane, just as does the dust. But this indicates no specific action and is no more than what is to be expected from an escharotic salt, which, if carelessly handled, produces pustules and deep ulcers of the skin, that leave permanent scars.'"

The above extract is from Dr. Arlidge's valuable work on "Diseases and Mortality of Occupations."[a] Further information is to be found in the same book on this subject.

[a] London. Percival & Co. 1892.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—James Little, M.D., F.R.C.P.I.

General Secretary—William Thomson, F.R.C.S.I.

SECTION OF PATHOLOGY.

President—Conolly Norman, F.R.C.P.I.

Sectional Secretary—John B. Story, F.R.C.S.I.

Friday, January 3, 1896.

The President in the Chair.

Leukæmia Splenica. (Living Exhibit.)

Mr. Denham showed the case of a gentleman from Kilkenny suffering from a very large splenic tumour. He was forty-one years of age, with a good family history, and had always enjoyed good health. Five years ago he returned from Queensland, where he had resided some years. The patient first observed the tumour six months ago and was treated for indigestion. He came under his (Dr Denham's) care at the beginning of December. He (Dr. Denham) had made four examinations of the blood with Gower's hæmatometer at intervals of a week, with the following results:—

	Red corpuscles	White corpuscles
1st - -	70 per cent.	9 per cent.
2nd - -	73 „	8 „
3rd - -	82 „	2 „
4th - -	85 „	2 „

Dr. M'Weeney had made stained preparations which were under the microscope.

In these preparations numerous eosinophile cells were to be seen, but Dr. M'Weeney had been unable to find any myelogenic cells. It was remarkable that notwithstanding the size of the tumour and the altered condition of the blood the patient enjoyed very fair health, suffering little or no discomfort. Slight constipation and breathlessness only on severe exertion.

The fact that under treatment the number of white corpuscles had markedly diminished, and that no blood marrow cells were discoverable gave the case decidedly a less hopeless appearance.

Dr. M'Weeney had nothing to add to Mr. Denham's remarks as regards the clinical aspect of the case. The examination of the blood simply showed an increase—not a very large increase—of polynuclear leucocytes. He pointed out the absence in the present case of myelocytes containing neutrophil granulations. Under another microscope, he showed the cells taken from a case he had had under observation at the Mater, early in 1894, in which the bone-marrow was undoubtedly affected. As regards the a- or eosinophil granulations, some pathologists, especially Kanthack and Hardy, were of opinion that they represent in a tangible form the protective material which prevents a person from getting a second attack of an infective disease.

Dr. Purser expressed a wish to know how the specimen had been stained. Many of the so-called neutral solutions were not, he said, neutral at all. He did not consider the increase in number of the leucocytes as absolutely peculiar of leucocythæmia. He found them in his own blood. He did not discern the granular matter spoken of.

The President called on Mr. Denham to reply to such observations as were made on his case.

Mr. Denham said he was not able to answer Dr. Purser as to the preparation of the specimen. That was entrusted to Dr. M'Weeney, who, he had no doubt, would answer for it.

Dr. M'Weeney said one specimen was stained with Ehrlich's hæmatoxylin and eosin, and the other by Biondi's triple stain. He thought that it was to be regretted that Dr. Purser could not see the granulations. He had to say that he himself saw them distinctly enough. He adhered to Ehrlich's view as to the existence and significance of the neutrophil granulations.

Cancer of the Liver.

Dr. Purser exhibited a specimen of columnar-celled cancer of the liver, which was remarkably firm in its mode of growth. The morbid mass filled the portal vein from about an inch below its bifurcation, to branches so small that they could be barely followed by the naked eye. No primary growth could be detected, unless a small nodule in the mucous membrane of the gall bladder could be taken as such. The bile duct was flattened by the growth in the portal vein, but did not seem to have been the starting point of the tumour. In places hæmorrhage had occurred into the alveoli of the cancer, but there were few signs of degeneration.

Dr. M'Weeney thought, from the examination he had just made, that the growth was one of papillary adenoma, in the sense in which

that term is used by Ziegler. He traced delicate strands of connective tissue running outwards towards the periphery. It was a remarkable fact, he thought, that Professor Purser did not find any primary growth. He referred to the case of a man from whose chin a tumour was removed—a week after the operation he died, and a *post-mortem* revealed a nodule in the fissure of the liver, but the nodule did not implicate the substance of the organ. He considered the filling up of the portal vein and its branches in the case under consideration as very singular. He contrasted the growth with a growth of supra-renal structure in the substance of the kidney, two instances of which he, on a former occasion, had brought before the Academy.

The PRESIDENT wished to ascertain what was the vascular supply of the growth, and whence came the hæmorrhage referred to.

DR. PURSER, in reply to Dr. M'Weeney, said that the tumour most certainly was not a papilloma. It might be called an adenoma; but he considered the difference between so-called malignant adenoma and cancer was not very great. In reply to the President, he said that the tumour had a blood supply of its own—a fact sufficient to explain the hæmorrhage. Whether the blood-vessels of the tumour were derived from the hepatic artery he (Dr. Purser) could not say.

DR. M'WEENEY said he did not assert that the tumour was a papilloma. What he did say was that he believed that it was a papillary adenoma in the sense in which Ziegler used that term.

The PRESIDENT at this point vacated the chair, which was occupied by Dr. Purser during the remainder of the proceedings.

Cancer of Gall Bladder.

MR. CONOLLY NORMAN described, as a pendant to Dr. Purser's case, three cases of cancer of the gall bladder. In all three the interest was chiefly clinical. In the first the liver was greatly enlarged. The border was sharply defined, and the right lobe was extremely and uniformly hard. The patient was not jaundiced, was not markedly constipated; there was no absence of bile from the motions. The *post-mortem* revealed some degree of adhesive peritonitis over the surface of the liver, the right lobe of which was infiltrated with cancerous growth. The left lobe was studded with a growth manifestly of the same nature. The gall bladder was filled with ropy pus and contained sixteen small facetted stones. A rough and ulcerated mass projected into the viscus, but did no damage to the cystic duct. In most of its aspects the case was an ordinary one; still the entire absence of jaundice was remarkable.

Microscopic examination proved that the case was one of the usual columnar-celled epithelial variety. He (Mr. C. Norman) knew no *ante-mortem* symptoms by which a diagnosis of cancer of the gall bladder could be arrived at in such a case. *Second case.*—A woman, forty years of age, had suffered for some months from constipation, and abdominal pain. There was no fever. The pain, she said, was most marked at night, and she attributed it to the fact that there were demons in her inside. On the 8th of September, 1895, she got a severe attack of vomiting. On examination she was found to present an enlarged area of hepatic dulness. There was also found a well-defined small knob in the position of the gall bladder. The diagnosis was made of gall-stones. The patient suffered from obstinate constipation. There was slight jaundice which never increased. Vomiting continued very troublesome, but was never feculent. Though the diagnosis of gall-stones was ventured upon, it was not deemed expedient to take any operative measures against this condition. She died on the 28th of September. The *post-mortem* appearances were as follows:—There was a good deal of general peritonitis. At the notch for the gall bladder there was, in the substance of the liver, a mass of cancerous infiltration. The point of interest to him (Mr. Norman) was that he made the mistake of supposing that this hard, small knob was something in the gall bladder. *Third case.*—An old woman, about sixty years of age, who got a rather sudden attack of jaundice. On examination the liver was found to be enlarged, and at a point corresponding to the notch of the gall bladder there was a large, pear-shaped prominence, easily felt by the hand, and diagnosticated to be a gall bladder full of stones. She gradually became more and more deeply jaundiced, but the area of hepatic dulness became less. She never had hæmatemesis. She died apparently from exhaustion. The *post-mortem* revealed no traces of previous peritonitis, and the tumour felt *ante-mortem* proved to be the gall bladder, but its distension was due to a cancerous mass blocking up the ducts and not to gall-stones.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.;
F.R.C.P.I.; F. R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, April 18, 1896.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Mar. 28.	Apr l 4.	April 11.	April 18.		Mar. 28.	April 4.	April 11.	April 18.
Armagh -	14·0	7·0	28·0	7·0	Limerick -	26·7	23·9	18·2	25·3
Belfast -	32·0	22·4	25·0	29·0	Lisburn -	12·8	34·1	12·8	8·5
Cork -	27·7	20·8	28·4	24·2	Londonderry	33·0	15·7	28·3	34·6
Drogheda -	8·8	4·4	17·6	22·0	Lurgan -	18·2	50·2	18·2	13·7
Dublin -	24·3	24·0	24·2	20·6	Newry -	24·1	28·2	16·1	24·1
Dundalk -	8·4	4·2	12·6	20·9	Sligo -	0·0	20·3	45·7	20·3
Galway -	37·8	11·3	41·5	37·8	Waterford -	17·5	17·5	35·0	22·5
Kilkenny -	0·0	28·3	37·8	14·2	Wexford -	13·5	18·1	9·0	9·0

In the week ending Saturday, March 28, 1896, the mortality in thirty-three large English towns, including London (in which the rate was 17·9), was equal to an average annual death-rate of 18·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·9 per 1,000. In Glasgow the rate was 20·8. In Edinburgh it was 17·5.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 25·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·8 per 1,000, the rates

varying from 0·0 in eleven of the districts to 4·5 in Wexford—the 3 deaths from all causes registered in that district comprising 1 from scarlatina. Among the 170 deaths from all causes registered in Belfast are 4 from measles, 4 from scarlatina, 8 from whooping-cough, 1 from diphtheria, 2 from enteric fever, and 2 from diarrhœa. The 21 deaths in Londonderry comprise 1 from whooping-cough and 1 from enteric fever.

In the Dublin Registration District the registered births amounted to 225—110 boys and 115 girls; and the registered deaths to 166—83 males and 83 females.

The deaths, which are 50 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·8 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 24·3 per 1,000. During the first thirteen weeks of the current year the death-rate averaged 25·3, and was 7·5 under the mean rate for the corresponding period of the ten years 1886–1895.

Only 14 deaths from zymotic diseases were registered, being 11 below the average for the corresponding week of the last ten years, and 3 under the number for the previous week. They comprise 2 from scarlet fever (scarlatina), 5 from influenza and its complications, 1 from diphtheria, 1 from ill-defined fever, 2 from diarrhœa, and 1 from dysentery.

Three cases of small-pox were admitted to hospital, being 1 over the admissions in the preceding week. Two small-pox patients were discharged, and 11 remained under treatment on Saturday, being 1 over the number in hospital on the previous Saturday.

The weekly number of cases of enteric fever admitted to hospital, which had risen from 5 in the week ended March 14 to 9 in the following week, fell again to 5. Fourteen patients were discharged, and 44 remained under treatment on Saturday, being 9 under the number in hospital at the close of the preceding week.

The number of cases of scarlatina admitted to hospital was 22, being a decline of 10 as compared with the admissions in the preceding week. Twenty-six patients were discharged, and 136 remained under treatment on Saturday, being 4 under the number in hospital on that day week.

Thirty-nine deaths from diseases of the respiratory system were registered, being 9 over the number for the preceding week, but 9 under the average for the thirteenth week of the last ten years. The comprise 22 from bronchitis, 11 from pneumonia or inflammation of the lungs, and 3 from pleurisy.

In the week ending Saturday, April 4, the mortality in thirty-three large English towns, including London (in which the rate was 17·9), was equal to an average annual death-rate of 18·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·7 per 1,000. In Glasgow the rate was 20·2, and in Edinburgh it was 13·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in nine of the districts to 9·4 in Kilkenny—the 6 deaths from all causes registered in that district comprising 1 from whooping-cough and 1 from diarrhœa. Among the 119 deaths from all causes registered in Belfast are 4 from measles, 3 from scarlatina, 4 from whooping-cough, 2 from enteric fever, and 5 from diarrhœa. Of the 10 deaths in Londonderry 2 were from measles. The 8 deaths in Lisburn comprise 2 from whooping-cough, and the 11 deaths in Lurgan comprise 1 from scarlatina and 1 from diphtheria.

In the Dublin Registration District the registered births amounted to 217—111 boys and 106 girls; and the registered deaths to 171—80 males and 91 females.

The deaths, which are 32 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·5 in every 1,000 of the population. Omitting the deaths (numbering 10) of persons admitted into public institutions from localities outside the district, the rate was 24·0 per 1,000. During the first fourteen weeks of the current year the death-rate averaged 25·3, and was 7·3 under the mean rate for the corresponding period of the ten years 1886–1895.

The number of deaths from zymotic diseases registered was 18, being 4 over the low number for the preceding week, but 8 under the average for the fourteenth week of the last ten years. The 18 deaths comprise 1 from small-pox—that of an unvaccinated woman aged 45 years—2 from scarlet fever (scarlatina), 4 from influenza and its complications, 1 from whooping-cough, 1 from diphtheria, 1 from enteric fever, 1 from diarrhœa, 1 from dysentery, and 1 from erysipelas.

The hospital admissions did not include any cases of small-pox: during the preceding week 3 cases had been admitted. Three small-pox patients were discharged, 1 died, and 7 remained under treatment on Saturday, being 4 under the number in hospital on that day week.

The number of cases of enteric fever admitted to hospital was 4, being 1 under the admissions in the preceding week, and 5 under those in the week ended March 21. Ten patients were discharged, and 38 remained under treatment on Saturday, being 6 under the number in hospital on the previous Saturday.

There was also a further decline in the number of scarlatina cases admitted to hospital, the admissions being 13 only, or 9 under the number in the preceding week, and 19 under that in the week ended March 21. Fifteen patients were discharged, and 134 remained under treatment on Saturday, being 2 under the number in hospital at the close of the preceding week.

As in the preceding week, 39 deaths from diseases of the respiratory system were registered. This number is 10 below the average for the fourteenth week of the last ten years. The 39 deaths comprise 22 from bronchitis and 16 from pneumonia or inflammation of the lungs.

In the week ending Saturday, April 11, the mortality in thirty-three large English towns, including London (in which the rate was 20·3), was equal to an average annual death-rate of 20·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·7 per 1,000. In Glasgow the rate was 21·5, and in Edinburgh it was 18·6.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 24·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·1 per 1,000, the rates varying from 0·0 in eleven of the districts to 6·3 in Londonderry—the 18 deaths from all causes registered in that district comprising 1 from measles and 3 from diarrhœa. Among the 133 deaths from all causes registered in Belfast are 1 from measles, 4 from scarlatina, 8 from whooping-cough, 1 from diphtheria, 1 from simple continued fever, 1 from enteric fever, and 2 from diarrhœa. The 41 deaths in Cork comprise 1 from scarlatina and 2 from diarrhœa. The Registrar for Limerick No. 1 District remarks:—"Hydrophobia, 1 death."

In the Dublin Registration District the registered births amounted to 195—101 boys and 94 girls; and the registered deaths to 170—86 males and 84 females.

The deaths, which are 13 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·4 in every 1,000 of the population. Omitting

the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 24·2 per 1,000. During the first fifteen weeks of the current year the death-rate averaged 25·3, and was 6·9 under the mean rate for the corresponding period of the ten years, 1886–1895.

The number of deaths from zymotic diseases registered was 18, being equal to the number in the preceding week, but 4 under the average for the 15th week of the last ten years. The 18 deaths comprise 1 from small-pox—that of a woman aged 25 years, vaccinated in infancy—2 from scarlet fever (scarlatina), 3 from influenza and its complications, 1 from whooping-cough, 1 from diphtheria, 1 from enteric fever, 2 from diarrhœa, 2 from dysentery, and 1 from erysipelas.

One case of small-pox was admitted to hospital. Eight small-pox patients remained under treatment on Saturday, being 1 over the number in hospital on that day week.

Nine cases of enteric fever were admitted to hospital against 4 in the preceding week, 5 in that ended March 28, and 9 in the week ended March 21. Three patients were discharged, 1 died, and 43 remained under treatment on Saturday, being 5 over the number in hospital on that day week.

The weekly number of cases of scarlatina admitted to hospital, which had fallen from 32 in the week ended March 21 to 22 in the following week and 13 in that ended April 4, rose to 25. Eleven patients were discharged, 2 died, and 146 remained under treatment on Saturday, being 12 over the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered was 35, being 4 under the number for each of the two weeks preceding, and 2 under the average for the 15th week of the last ten years. The 35 deaths comprise 18 from bronchitis and 14 from pneumonia or inflammation of the lungs.

In the week ending Saturday, April 18, the mortality in thirty-three large English towns, including London (in which the rate was 19·4), was equal to an average annual death-rate of 19·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·0 per 1,000. In Glasgow the rate was 19·9, and in Edinburgh it was 17·7.

The average annual death-rate in the sixteen principal town districts of Ireland was 23·9 per 1,000 of the population.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 2·1 per 1,000,

the rates varying from 0·0 in ten of the districts to 15·7 in Londonderry—the 22 deaths from all causes registered in that district comprising 5 from measles, 2 from whooping-cough, and 3 from diarrhœa. Among the 154 deaths from all causes registered in Belfast are 4 from measles, 3 from scarlatina, 4 from whooping-cough, 1 from diphtheria, 2 from enteric fever, and 3 from diarrhœa. The 10 deaths in Galway comprise 1 from whooping cough and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 221—125 boys and 9 girls; and the registered deaths to 138—65 males and 73 females.

The deaths, which are 47 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 20·6 in every 1,000 of the population, being 6·9 under the mean rate for the corresponding period of the ten years, 1886–1895. All of the deaths in public institutions registered were deaths of persons admitted from within the district.

Only 10 deaths from zymotic diseases were registered, being 10 below the average for the corresponding week of the last ten years, and 8 under the number for the previous week. They comprise 4 from scarlet fever (scarlatina), 2 from influenza and its complications, 1 from whooping-cough, and 1 from enteric fever.

No cases of small-pox were admitted to hospital. In the preceding week 1 case had been received. Three small-pox patients were discharged and 5 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

Eight cases of enteric fever were admitted to hospital, being 1 under the admissions for the preceding week, but 4 over the number for the week ended April 4. Eight patients were discharged, and 43 remained under treatment on Saturday, being equal to the number in hospital on the previous Saturday.

The number of cases of scarlatina admitted to hospital was 23, being 2 under the admissions in the preceding week, but 10 over the number admitted during the week ended April 4. Fifteen patients were discharged, 3 died, and 151 remained under treatment on Saturday, being 5 over the number in hospital at the close of the preceding week.

Deaths from diseases of the respiratory system, which had fallen from 39 in the week ended April 4 to 35 in the following week, fell to 24, or 16 below the average for the corresponding week of the last ten years. The 24 deaths comprise 13 from bronchitis and 6 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of April, 1896.

Mean Height of Barometer, - - -	30·179 inches.
Maximal Height of Barometer (on 19th, 9a.m.),	30·488 „
Minimal Height of Barometer (on 28th, 9 p.m.),	29·691 „
Mean Dry-bulb Temperature, - -	49·7°.
Mean Wet-bulb Temperature, - -	46·3°.
Mean Dew-point Temperature, - -	42·6°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·273 inch.
Mean Humidity, - - - -	77·0 per cent.
Highest Temperature in Shade (on 24th), -	64·5°.
Lowest Temperature in Shade (on 2nd), -	36·1°.
Lowest Temperature on Grass (Radiation) (on 2nd), - - - - -	33·0°.
Mean Amount of Cloud, - - -	49·7 per cent.
Rainfall (on 16 days), - - -	·883 inch.
Greatest Daily Rainfall (on 13th), - -	·334 inch.
General Directions of Wind, - -	W., N.W.

Remarks.

A very favourable, fine and spring-like month. In Dublin rain fell on as many as 16 days, but it was almost entirely in the form of showers, and the total precipitation was slightly under nine-tenths of an inch. The steadiness of the barometer was a feature of the first ten days of the month. A relapse into winter took place on the 27th, from which day the weather remained cold to the end. Very little easterly wind was felt. The amount of cloud was small, particularly at 9 p.m., when it was only 41·7 per cent.

In Dublin the arithmetical mean temperature (50·9°) was 3·2° above the average (47·7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 49·7°. In the thirty-one years ending with 1895, April was coldest in 1879 (the cold year) (M. T. = 44·5°), and warmest in 1893 (M. T. = 51·4°). The month of April, 1893, was the warmest for at least 30 years, yet it was only half a degree warmer than the month now under discussion.

The mean height of the barometer was 30·179 inches, or 0·329 inch above the average value for April—namely, 29·850 inches The mercury rose to 30·488 inches at 9 a.m. of the 19th, and fell to 29·691 inches at 9 p.m. of the 28th. The observed range of atmospheric pressure was, therefore, ·797 inch—that is, a little more than three-quarters of an inch.

The mean temperature deduced from daily readings of the dry

bulb thermometer at 9 a.m. and 9 p.m. was 49·7°, or 5·1° above the value for March, 1896. Using the formula, *Mean Temp.* = *Min.* +(*max.*—*min.* × ·476), the value is 50·5°, or 3·1° above the average mean temperature for April, calculated in the same way, in the twenty-five years, 1865–89, inclusive (47·4°). The arithmetical mean of the maximal and minimal readings was 50·9°, compared with a twenty-five years' (1865–1889 inclusive) average of 47·7°. On the 24th the thermometer in the screen rose to 64·5°—wind, S.W.; on the 2nd the temperature fell to 36·1°—wind, W.N.W. The minimum on the grass was 33·0° also on the 2nd.

The rainfall was ·883 inch, distributed over 16 days. The average rainfall for April in the twenty-five years, 1865–89, inclusive, was 2·055 inches, and the average number of rainy days was 15·2. The rainfall, therefore, was considerably below the average, while the rainy days were slightly in excess. In 1877 the rainfall in April was very large—4·707 inches on 21 days; in 1882 also, 3·526 inches fell on 20 days, and in 1894, 3·123 inches on 20 days. On the other hand, in 1873, only ·498 inch was measured on 8 days; and in 1870, only ·838 inch fell, also on 8 days.

Slight fogs were observed on the 20th and 21st. High winds were noted on 8 days, reaching the force of a gale on the 10th and 12th. Hail fell on the 10th, 11th, 12th, 28th, 29th, and 30th. The temperature exceeded 50° in the screen on every day except the 12th. It rose to or above 60° on 8 days, but never fell to 32° in screen, or even on the grass. The mean lowest temperature on the grass was 40·6°, compared with 37·8° in 1895, 40·0° in 1894, 38·2° in 1893, 32·4° in 1892, 34·1 in 1891 and 1890, 34·4° in 1889, 34·6° in 1888, and 31·6° in 1887. Thunder was heard on the afternoon of the 29th.

Clouded skies, light to moderate north-westerly winds and passing showers were the main features of the period ending Saturday, the 4th. An area of high atmospheric pressure remained almost stationary off the W. of Ireland throughout—the barometer standing a little above 30·30 inches. Meanwhile, a series of areas of relatively low pressure passed south-eastwards across the south of Scandinavia to Germany and Central Europe—hence the N.W. winds and changeable weather which prevailed. In Dublin the barometer ranged only from 30·310 inches at 9 p.m. of Wednesday, the 1st (wind N.E.), and also at 9 a.m. of Thursday, the 2nd (wind W.N.W.), to 30·238 inches at 9 a.m. of Good Friday, the 3rd (wind N. by W.) Rain fell on 2 out of the 4 days, to the amount, however, of only ·017 inch. The shade thermometer fell to 36·1° on the 2nd, and rose to 56·8° on the 4th.

Quiet and fine, though often cloudy, in the earlier part of the week ended Saturday, the 11th, the weather after Thursday fell into a showery, squally, and generally unsettled condition. Temperature also gave way rapidly. These changes were brought about by the appearance in the far North of a large area of low atmospheric pressure, which gradually spread out eastwards and southeastwards across Scandinavia to Central Europe. The anticyclone, which had held its position over the West of Ireland from the closing days of March, was still found off the Kerry coast on Sunday and Monday. Its centre then moved in a south-easterly direction towards the Bay of Biscay and France, while the low pressure area in the North, already mentioned, encroached more and more on the British and Irish as well as the Norwegian coasts. The result was that the wind backed towards S.W. and freshened, with at first a rising temperature. On Wednesday the thermometer rose to 64° in England and Scotland, on Thursday to 62° in the east of Ireland, and to 62° or 63° in the east of Scotland. Showers began to fall on the last-named day, and a sharp decline in temperature followed at night. Friday and Saturday were rough and inclement, with squalls and heavy passing shows of cold rain and hail, alternating with finer, brighter intervals. Lightning was seen throughout Scotland on Friday night. In Dublin the mean height of the barometer was 30·202 inches, pressure ranging between 30·308 inches at 9 a.m. of Sunday (wind N.W.) and 29·923 inches at 9 a.m. of Saturday (wind W.N.W.). The corrected mean temperature was 51·2°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 50·0°. On Thursday the thermometer rose to 61·8° in the screen, on Friday it fell to 41·9°. The prevailing direction of the wind was W.N.W. Rainfall amounted to ·269 inch on three days, ·168 inch being registered on Friday, and ·080 inch on Saturday.

The weather was changeable and showery throughout the week ended Saturday the 18th. At first it was very rough, cold, and unsettled, a fresh to strong north-westerly gale being felt on Sunday. The wind afterwards moderated and became somewhat variable in direction, with much cloud and frequent showers. At the end of the week an anticyclone of some intensity had formed over the British Isles, but it was accompanied with dull, damp weather and very light, variable winds. The gale of Sunday was caused by a depression with steep gradients for N.W. winds in its south-western quadrant, which travelled in a south-easterly direction from the Norwegian Sea to Denmark and the North of Germany. Hail and sleet fell in many places, and thunder and lightning

occurred at Kew and Spurn Head. There was a brief spell of fine weather on Monday, but at night some shallow secondary disturbances, moving eastward across Ireland and the South of England, led to a considerable fall of rain in those localities. On Thursday morning a new depression was central off the Hebrides, and the weather was again blustering and showery. This system threw out a well marked V-shaped "secondary" across England and the North Sea by Friday morning, while an area of high pressure formed over Ireland, England, and the Bay of Biscay. This latter change led to quiet, dull, damp weather on Saturday. In Dublin the mean height of the barometer was 30·151 inches, pressure ranging from 29·888 inches at 9 a.m. of Thursday (wind S.W.) to 30·432 inches at 9 p.m. of Saturday (wind W.S.W.). The corrected mean temperature was 49·4°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 48·5°. On Monday the screened thermometers sank to 38·6°, on Friday they rose to 58·9°. The rainfall was ·458 inch on six days, ·334 inch being measured on Monday. The prevalent wind was W.N.W.

Most favourable weather held throughout the week ended Saturday, 25th, particularly in Ireland, where the distribution of atmospheric pressure was steadily anticyclonic until Saturday. On this day, the barometer gave way decidedly in the North-west, as a large but not deep depression advanced to that region from the Atlantic. At the beginning of the period the barometer stood above 30·50 inches in Munster, and gradients were slight throughout Ireland. Consequently, fine, quiet, hazy weather prevailed. During the following days, the weather remained fair and still. The diurnal range of temperature was considerable—bright sunny days being succeeded by hazy cold nights. This was especially the case in Central England, where some sharp ground frosts were felt. At Cambridge the thermometer fell to 30° even in the screen on the nights of both Monday and Thursday. On Wednesday a depression swept south-eastwards across Scandinavia, affecting the weather in Great Britain, but not in Ireland. Both in Scotland and in the east of England at this time the sky became overcast, temperature fell, and showers were reported from many stations. On Saturday a separate low pressure area reached the N. and N.W. of Ireland, causing showers in this country. In Dublin the mean atmospheric pressure was as high as 30·306 inches, the barometer falling slowly from 30·488 inches at 9 a.m. of Sunday (wind W.S.W.) to 29·955 inches at 5 p.m. of Saturday (wind W.) The corrected mean temperature was 52·9°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 52·3°. The screened thermometers

rose to 64·5° on Friday, having fallen to 42·1° on Thursday. Rain was measured on Saturday to the amount of ·009 inch only. The prevailing winds were E. and W.

From Sunday, the 26th, the weather underwent an unfavourable change, and a distinctly cold, unsettled period occurred owing to the persistent presence of an area of low atmospheric pressure between Scotland and the Scandinavian Peninsula. In connection with this primary system a series of secondary depressions developed over the British Isles and the North Sea. Sunday was cloudy at times, and squally westerly winds blew, the weather being otherwise fine. Passing showers began to fall on Monday, and towards night a marked decline in temperature set in. During the three following days, more or less heavy showers of sleety rain and hail broke in upon fair, bright intervals. In many places both in Ireland and in Great Britain thunder and lightning accompanied the showers, and the wind blew gustily from N.W. or N. Towards nightfall the sky cleared, with the result that very low temperatures were recorded, frost occurring even in the screen at some inland stations on Thursday night, when the thermometer sank to 30° at Parsonstown, and to 32° at both Loughborough and Cambridge. In Dublin the barometer ranged during the period from 29·691 inches at 9 p.m. of Tuesday (wind W.) to 30·173 inches at 9 p.m. of Thursday (wind N.). On Sunday the screened thermometers rose to 62·8°; on Thursday they sank to 37·1°. Rain fell on four days to the amount of ·130 inch.

The rainfall in Dublin during the four months ending April 30th amounted to 5·781 inches on 63 days, compared with 10·233 inches on 65 days in 1895, 9·151 inches on 73 days in 1894, 6·242 inches on 56 days in 1893, 5·922 inches on 61 days in 1892, only 3·203 inches on 46 days in 1891, 9·045 inches on 59 days in 1890, and a twenty-five years' average of 8·466 inches on 66·2 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall amounted to ·950 inch on 8 days. The heaviest falls in 24 hours were ·280 inch on the 13th, and ·270 inch on the 10th. The total rainfall in 1896 up to April 30, was 5·686 inches on 50 days, compared with 12·570 inches on 54 days in 1895, 12·456 inches on 70 days in 1894, and 8·530 inches on 54 days in 1893.

At Cloonevin, Killiney, Co. Dublin, 1·02 inches of rain fell on 13 days in April. The maximal fall in 24 hours was ·32 inch on the 13th. The average rainfall in April of the ten years, 1885–1894, was 1·716 inches on 13·2 days. Since January 1, 1896, 5·27 inches of rain fell at this station on 55 days, compared with 11·28 inches on 66 days in 1895, 9·09 inches on 74 days in 1894, and 6·94 inches on 57 days in 1893.

PERISCOPE.

PRIZES IN BELGIUM.

THE *Académie Royale de Médecine de Belgique* announces the following prizes for essays:—On solanaceous plants used in medicine and pharmacy, 500 francs, 20th June, 1896; on the part played by migratory cells, from blood and lymph, in the organisation of tissues in warm-blooded animals, 1,000 francs, 15th November, 1896; on putrefaction, in relation to public health and legal medicine, 1,000 francs, 15th April, 1897; on the therapeutical value of gastro-intestinal antisepsis, 800 francs, 15th June, 1897. There will also be a prize of 8,000 francs for an essay "elucidating by clinical facts, and if necessary by experiments, the pathogeny and therapeusis of diseases of the nervous centres, and chiefly of epilepsy." There will be in, in this case, minor prizes—300 francs to 1,000 francs—for deserving competitors failing to take the first place. Essays to be sent in by 15th September, 1899. Dr. Da Costa Alvarenga, of Pianhy (Brazil), bequeathed money to found an annual prize for the best unpublished work upon any branch of medicine. For essays sent in by 15th January, 1897, the prize offered is 750 francs. Competing essays for any of these prizes may be written in Latin, French, or Flemish.

METHYLENE BLUE.

DR. NETCHAIEFF (*Le Nord Médical*) reports the following good results from the use of methylene in chronic Bright's disease:—A brewer's man, fifty years old, suffering from a very typical renal attack and cardiac troubles. He had polyuria and albuminuria, with hyaline tube casts. On the 7th March, 1895, the author prescribed ten centigrammes of methylene blue daily, and kept the patient under observation until the 31st of May following, when he returned to his ordinary food and work. He returned for examination on the 2nd of July following, when the urine was found to be normal in amount, free from albumen and casts, and the œdema of the legs was completely gone.—*La Presse Médicale.*

MUSIC AND BALDNESS.

THE *Boston Medical and Surgical Journal* calls attention to the fact, which it says is demonstrated by an English statistician, that music has a wonderful influence on the growth of the hair. This statistician has discovered baldness to be prevalent in twelve per cent. of composers, which is about the average for people in general.

Instrumental performers, however, almost always retain their hair up to an advanced period of life. Players on the piano and violin have particularly good heads of hair, and the aggressive example of Paderewski at once comes into one's mind in support of this assertion. On the other hand, brass instruments have a fatal influence on the growth of the hair, notably the cornet, French horn, and trombone. The baldness which prevails among members of regimental bands has been given the name of "trumpet baldness." Our contemporary does not venture to explain this curious phenomenon, but simply quotes these facts. If well established no doubt they will give a tremendous impetus to the use of the piano and violin. Doctors, it adds, are the baldest of all professional men, the percentage being thirty.—*Med. Rec.*

DR. NORMAN W. KINGSLEY.

We are very pleased to learn that the well-known author of *Oral Deformities*, Dr. Norman W. Kingsley, of New York, has so far recovered from his serious and protracted illness as to be able to undertake a journey to Europe this year. Dr. Kingsley has decided to spend the months of July, August, and September, in Dresden, at Walpurgis Strasse 15, where his advice may be sought respecting cases of cleft palate and their treatment.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS

Apenta.

We have examined an aperient water, produced from the natural springs Uj Hunyadi, near Buda-Pest. This water is, as regards its flavour, the least objectionable we have ever met with. It cannot be expected that aperient waters should have the flavour of Apollinaris or other well-known "table" waters; still we can understand that it is quite possible to find mineral waters of the purgative class free from the intensely disagreeable flavour characteristic of many waters having aperient qualities. The Apenta is a liquid which, moderately diluted, no one could object to on the ground of being nauseous. At the same time its mildness does not prevent it from being a perfectly reliable cathartic, causing by its use no abdominal discomfort. The eminent Professor of Chemistry, Dr. Liebermann, a Royal Councillor for Hungary, Director of the Royal State Chemical Institute, Buda-Pest, under whose special control the springs have been placed, has made an elaborate analysis of it, which shows that it contains in parts per 1,000:—Sulphate of magnesium, 24·4968; sulphate of

sodium, 15·4320; sulphate of calcium, 1·0989; chloride of sodium, 1·8720; bicarbonate of calcium, 0·8843; bicarbonate of protoxide of iron, 0·0189; silicic acid, 0·0100. Besides these constituents, the water contains traces of lithia and potash. The specific gravity, at 15° C., amounts to 1·0414. The Hungarian analyst adds:—"We know of no stronger or more favourably constituted natural aperient water than that yielded by the Uj Hunyadi Springs." We do not believe that the above enconium at all exaggerates the good qualities of Apenta.

Tyree's Litmus Pencil.

We have received from Messrs. Thomas Christy & Co., 25 Lime-street, London, E.C., a sample of an ingenious litmus pencil, designed by Mr. J. S. Tyree, chemist, and patented February 5, 1891. It is constructed of chemically pure blue and red litmus, inserted in an ordinary wood pencil. It is characterised by such extreme sensibility that it will detect one part in a hundred thousand, whereas litmus paper can only detect one part in fourteen hundred (1400). For use, sharpen the ends as you would any ordinary lead pencil, mark on a strip of white paper and insert the paper in the specimen to be tested. If the blue changes to red acid is present, if the red turns blue alkali is discovered. Dampen the ends when using. The price of the pencil is, post free, 1s. 3d. The only drawback we can discover is the brittleness of the colouring material, which causes a good deal of waste in the process of sharpening the pencil. A little extra care should, however, obviate this.

Ox-Bile Tabloids.

Messrs. Burroughs Wellcome & Co., of Snow Hill Buildings, London, E.C., draw our attention to purified ox-bile "tabloids"—"Tabloid" Fel. Bovin. Purif. (B. W. & Co.), a recent addition to their list of "tabloids" of compressed drugs. These are prepared from ox-bile from which the tissue débris, mucilaginous bodies, and unnecessary colouring matter have been separated. The emulsifying, antiseptic and stimulating principles in the bile are supplied, therefore, in an active and compendious form. Some very satisfactory medical reports have been received, bearing on the successful employment of these "tabloids" in the treatment of emaciated conditions due to deficiency or cessation of the supply of bile arising from organic disease of the liver or obstruction of the bile ducts. They have been employed also as an alterative, and, probably owing to their stimulating action on the muscular tissue of the intestines, as a laxative in chronic constipation. We are told that

they form an effective vermifuge in *ascaris lumbricoides.* In order to avoid the irritating effect of bile on the mucous membrane of the stomach, these "tabloids" are keratin-coated, so that they do not disintegrate until they reach the alkaline contents of the intestines. The efficacy of the keratin-coating is, however, open to some doubt.

Effervescent Tabloids of Lithium Citrate and Bitartrate.

The same firm have submitted to us a specimen bottle of a much more palatable preparation than the ox-bile, namely, their new effervescent lithium citrate "tabloids"—"Tabloid" Lithiæ Citrat. (B. W. & Co.). Each "tabloid" contains exactly four grains of citrate of lithium. It may be taken in one of three ways—by dissolving in water, the solution to be swallowed after effervescence has ceased; by crushing, stirring with a wineglassful of water and taking as an effervescing draught; or by placing on the tongue and allowing it to dissolve slowly. Probably the last method is at the same time the most pleasant and most convenient, the piquant effervescence on the tongue entirely covering the peculiar taste of the drug.

It is contended that the successful treatment with lithium salts depends largely upon the regularity with which the doses are administered. In this respect the new "tabloids" fill a real want, as they may be carried in the pocket in a small bottle or pill box without taking up an appreciable amount of space, and are then always ready for instant use, in the train, at the office or elsewhere. Citrate of lithium is very soluble and more prompt in its action than the carbonate. Hence we anticipate a very wide sphere of usefulness for this "tabloid" as a diuretic in those states of the system in which urates are deposited in the tissues and are present in the animal fluids. One "tabloid" dissolved in about an ounce of water should prove useful as an external application for gouty swellings. Effervescent lithium citrate "tabloids" are supplied in bottles containing 100.

Our attention has also been drawn to new effervescing "tabloids" of bitartrate of lithium, prepared by the same firm. The preparation of this salt in the compressed effervescent form has been suggested because it is held that the acid tartrate increases the normal alkalinity of the blood, eliminating uric acid. Further, it is said not to have those unpleasant after-effects sometimes attributed to alkaline combinations of lithia. The bitartrate tabloid is almost too acid to hold in the mouth while it effervesces, but it makes a palatable draught in water.

A RECLAMATION BY DR. WILLIAM MURRELL.

TO THE EDITOR OF "THE DUBLIN JOURNAL OF MEDICAL SCIENCE."

SIR,—In the May number of *The Dublin Journal of Medical Science* there appears a review of my recently published Manual of Pharmacology and Therepeutics of so exceptional a character that I gladly avail myself of your courteous permission to say a few words in reply. In a text-book, intended primarily for students, it is practically impossible to quote authorities or to enter into the discussion of controversial matters. The reviewer may possibly have thought that mine were mere random assertions, but, as a matter of fact, I am prepared to quote chapter and verse for each and every one of the statements, the correctness of which he challenges.

(1.) In the first place he takes exception to my account of the history of the discovery of anæsthetics, and maintains that I have fallen "into the common mistake of giving Mr. Davy too much credit for the introduction of nitrous oxide gas." My answer to this is that my account is an abstract of a paper by Sir James Paget, entitled "Escape from Pain: the History of a Discovery," which appeared in the December number of the *Nineteenth Century* for 1879. I do not think that I could have gone to a better authority for information on the subject.

(2.) Secondly, he states that I have misspelt the name of the lady after whom the genus which yields the Peruvian bark was named, and that as she married "Don Luis Geronimo Fernandez de Cabrer*ai*, y Bobadilla," fourth Count de la Chinchon, her name was "Chinchon" and not "Cinchon." My answer to this is that my authority is Linnæus (*Genera Plantarum*, 1742), who, when he named the genus after her, spelt the word "Cinchona." I am quite aware that Markham has suggested that Linnæus was mistaken in the spelling of the name, but I am quite content to accept him as my authority. Incidentally I may point out that my critic, in endeavouring to put me right on the spelling of the lady's name, has misspelt one of the names of the husband. It should be "Cabrera," and not "Cabrerai."

(3.) Next, the reviewer objects to my section on "Old-fashioned Remedies," and complains that I "give no faithful picture of medicine in the days of Dioscorides or Pliny, not even of the Saxon leech*dooms*." This is perfectly true, but when you buy a ten-and-sixpenny book on Pharmacology you do not expect a classical picture thrown in. I do not know what he means by "Saxon leechdooms," but if he means leechdoms my answer is, that my account was taken from "Leechdoms, Wortcunning, and Starcraft," a work in three volumes, by the Rev. Oswald Cockayne, M.A., published in 1864-6, by the authority of the Lords Commissioners of Her Majesty's Treasury, under the direction of the Master of the Rolls.

(4.) The reviewer states that the "toxic properties of the bromides should not have been overlooked." My answer to this is, that they have not been overlooked, and that they are fully described in their proper place on pages 146 and 147. As he goes on to say that "it is rather painful to

find death from bromide cropping up when our English text-books make no mention of the probability of such an effect from their use," I am forced to the conclusion that he has not been careful to distinguish between *toxic* and *lethal*. As to the omission of any reference to the lethal action of the bromides, the only case with which I am acquainted was published on March 26th of this year, some weeks after the appearance of my book. Moreover, there is no reference to any fatal case in any of the recent works dealing with such subjects, such as Luff's Forensic Medicine, Shoemaker's Materia Medica, or the Twentieth Century Practice. I have communicated with Dr. Luff, who says:—"When writing my book I found in a German paper a record of a case of death from bromide occurring in a woman who had been taking it for epilepsy for many weeks, but I decided not to insert it, as I was by no means convinced that death was due to the bromide. I thought there was too much confusion between the *post hoc* and the *propter hoc*." My critic says that, "not long since" Dr. Greenless recorded two cases of poisoning by bromides, but as he failed to give the reference I was unable to identify the paper. I am indebted to you, sir, for your courtesy in informing me that it was published in the "Quarterly Journal of Inebriety," Vol. XVI., No. 1. On inquiry I find that this is a Journal which appears under the auspices of an Association for the Cure of Inebriates, and that it is published in Hartford, Conn. As far as I can ascertain there is not a single copy to be had in London, so that it is not very surprising that these cases should have escaped attention. But to speak of the *probability* of death arising from the administration of the bromides is a palpable absurdity.

(5.) Lastly, the reviewer complains that I give no account of agaric acid. My answer to this is that it is not one of the drugs included in the Syllabus of the Conjoint Board, and does not fall within the scope of my work. He is good enough to say that he would have been glad to have had my views on its therapeutic action. My reply to this is that in the *Practitioner* of November, 1892, I published a paper of nineteen pages, giving not only the literature of the subject but the details of a large number of observations on patients made with various preparations of agaric.

I am, sir,
Your obedient servant,

WILLIAM MURRELL.

Welbeck-street, London, W.
May 21, 1896.

Our Reviewer makes the following reply:—

(1.) It would have been well had Dr. Murrell consulted the original papers of Beddoes and Watt before making an authoritative statement to students.

(2.) Linnæus named the plant cinchona, in honour of the Countess de la Chinchon; Linnæus does not give the spelling of the Spanish name. Cabrerai is the seventeenth century spelling of the name, as may be seen by consulting Lopez and Cervantes.

(3.) The "Old-Fashioned Remedies" to which exception is taken include the following:—"The Magi also taught to drink the ashes of a pig's pizzle in sweet wine, and so to make water into a dog's kennel, adding the words, 'least he, like a hound, should make urine in his own bed.'" The author writes: "Pliny mentions many curious remedies," and mentions curing ague by amulets, by dust in which a hawk has rolled, of the longest tooth of a black dog, of the heart of a viper, &c., &c. We submit that such quotations do not illustrate the teaching of Pliny or of our Saxon leeches. The spelling "leechdoom," although not usual, is not incorrect; *oo* in modern English represents the Anglo-Saxon *ó*.

(4.) With the aid of the *Index Catalogue*, the *Index Medicus*, Sajous' *Universal Medical Annual*, and like works, it is comparatively easy to make up the literature of almost any medical subject. If, however, an author does not avail himself of these aids he cannot avoid omissions. The search through works on toxicology was not exhaustive, for Professor Mann quotes Eigner's case of death from excessive dosing with bromide of potassium.

(5.) Dr. Murrell included agaric acid in his list of anhidrotic remedies; and it was but reasonable to expect in the book some statement as to its value or otherwise. He answers that it did not fall within the scope of his work.—Then why mention it at all?

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